8805 7335

TN
859
.C64
C3756
1/83
v.2

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

SHOUT
SHARE
IT

TABLE OF CONTENTS

AIR QUALITY AND METEOROLOGY

PAGE NO.

2.3.1 Ambient Air Quality II-5
  2.3.1.1 Gaseous Constituents II-7
  2.3.1.2 Particulates II-25

2.3.2 Trace Metals II-29

2.3.3 Meteorology II-31
  2.3.4.1 Climatological Records II-47
  2.3.4.2 Precipitation Data II-57
  2.3.4.3 Wind Fields II-63

2.3.4 Visibility II-93

2.3.5 Atmospheric Diffusion Studies II-99

2.3.6 Inversion Studies II-189

2.3.7 Tethersonde Soundings II-191

2.3.8 Air Quality Assurance II-193

2.3.9 Data Reports II-199
  May II-201
  June II-251
  July II-301
  August II-351
  September II-395
  October II-439
  November II-483
  December II-527

2.3.10 Data Corrections II-571

2.3.11 Supplemental Data Report II-577

2.3 Air Quality and Meteorology

The Air Quality Monitoring Program has been developed to measure background levels of atmospheric gaseous and particulate constituents and meteorological processes which affect transport and diffusion.

The air quality monitoring network during the Interim Monitoring Period (shown on Figure 2.3-1) includes the following:

- One air quality trailer at Station AB23 that has been in continuous operation since September, 1974 (prior to the 2 year Baseline Program).
- One 60-meter meteorological tower located at Station AA23 (adjacent to air quality trailer AB23), also operational since September, 1974. Meteorological parameters are monitored at the 10-meter, 30-meter, and 60-meter levels.
- Weighing-bucket rain gauges at Stations AB23 and AD28 (leachate pile).

In addition, the following stations were operational for a portion of the monitoring period reported in this document:

- One air quality trailer at Station AB26 which initiated operation in October 1981, and discontinued July 27, 1982.
- One meteorological station, AD20, which initiated operation in February 1982, and discontinued July 26, 1982.
- Weighing-bucket rain gauges at Stations AB26 and AD20, which were discontinued July, 1982.

Parameters measured at these stations are listed in Table 2.3-1. Missing data codes for air quality and meteorology are listed in Table 2.3-2. These codes are used on the diurnal tables to explain reasons for instrument down time.

Eight monthly data reports (May - December 1982) are included in this document. These contain all the basic data used for the summaries and analyses reported in the following sections.

All monitoring stations are referenced by their four-digit computer codes. A cross-reference of the computer code and station I.D. appear in Section 4.0 (Data Automation).

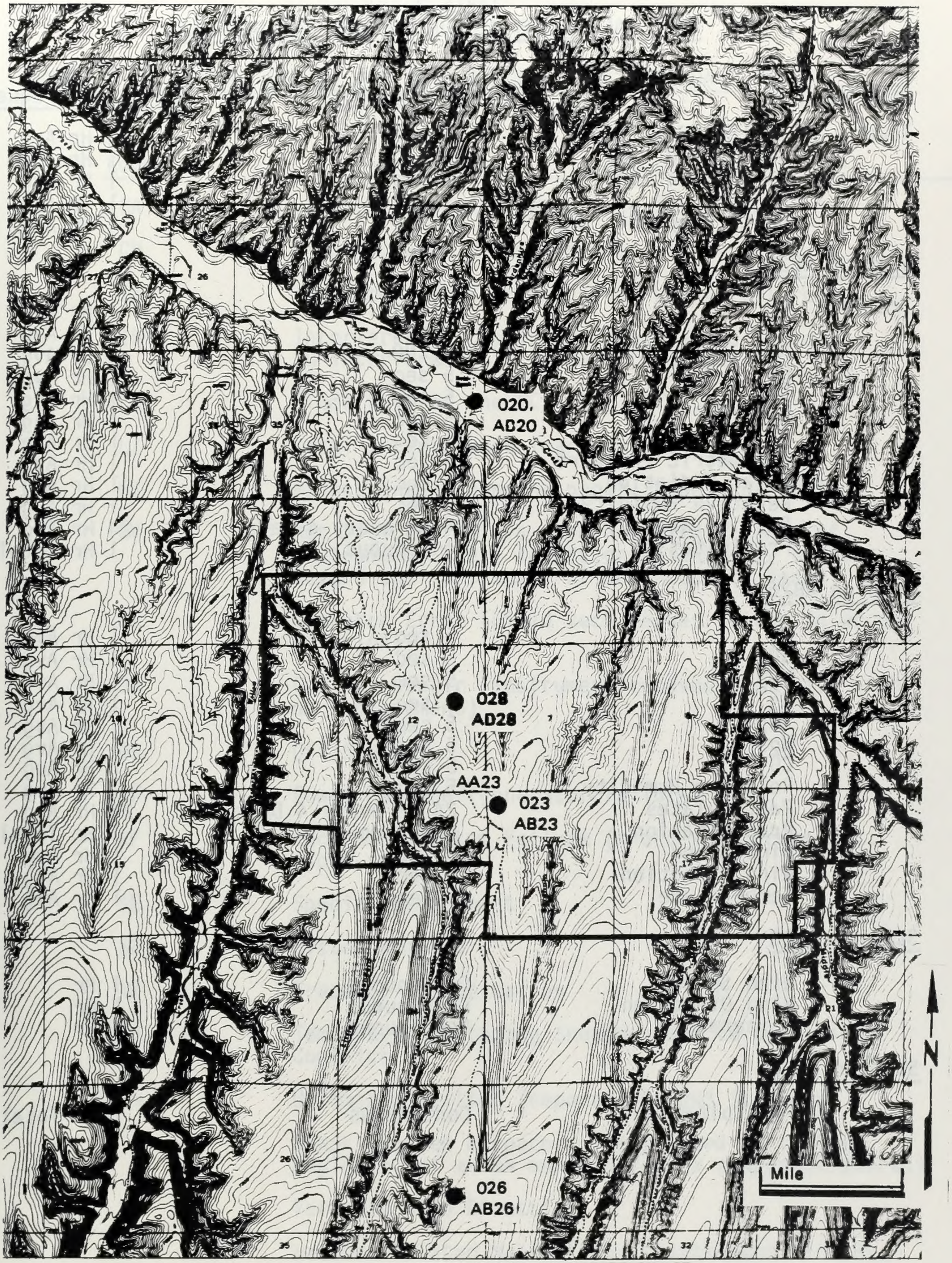

020
AD20
028
AD28
AA23
023
AB23
026
AB26
N
Mile

FIGURE 2.3-1

Ambient Air Quality
Interim Monitoring Network

TABLE 2.3-1
AIR QUALITY AND METEOROLOGICAL MEASUREMENTS

Station AA23		Sampling Frequency	Minimum Reporting Frequency
Tower:	(@ 10m, 30m, 60m)	5 sec	1 Hr Avg
	Wind Speed	5 sec	1 Hr Avg
	Wind Direction	5 sec	1 Hr Avg
	Temperature	5 sec	1 Hr Avg
	Delta Temp (60-10m)	5 sec	1 Hr Avg
Station AB23			
Trailer:	NO	5 sec	1 Hr Avg
	NO_x	5 sec	1 Hr Avg
	NO_2	NO_x-NO	1 Hr Avg
	O_3	5 sec	1 Hr Avg
	SO_2	5 sec	1 Hr Avg
	H_2S	5 sec	1 Hr Avg
	CO	5 sec	1 Hr Avg
	Barometric Pressure	5 sec	1 Hr Avg
	Solar Radiation	5 sec	1 Hr Avg
	Relative Humidity	5 sec	1 Hr Avg
	Particulates	24 Hr every 4 Days	24 Hr Avg
	Precipitation	Continuous	1 Hr Total
Station AB26			
	No	5 sec	1 Hr Avg
	NO_x	5 sec	1 Hr Avg
	NO_2	5 sec	1 Hr Avg
	O_3	5 sec	1 Hr Avg
	SO_2	5 sec	1 Hr Avg
	H_2S	5 sec	1 Hr Avg
	CO	5 sec	1 Hr Avg
	Relative Humidity	5 sec	1 Hr Avg
	Particulates	24 Hr every 4 Days	24 Hr Avg
	Precipitation	Continuous	1 Hr Total
	Wind Speed	5 sec	1 Hr Avg
	Wind Direction	5 sec	1 Hr Avg
	Temperature	5 sec	1 Hr Avg
Station AD20			
	Wind Speed	Continuous	1 Hr
	Wind Direction	Continuous	1 Hr
	Temperature	Continuous	1 Hr
Station AD28			
	Precipitation	Continuous	1 Hr Total

TABLE 2.3-2

AIR QUALITY AND METEOROLOGICAL MISSING DATA CODES

Code	Description
CA	Calibration (calibration, system check)
CM	Calm (no wind direction when wind speed = 0)
IM	Instrument Malfunction (instrument failures)
IN	Interference (CO_2 interference on sulfur data, SO interference in oxidant readings)
FO	Flame Out (on the GC - THC, HC, CH_4, CO)
LI	Local Interference (car nearby)
MT	Maintenance (changing paper, tape, charcoal)
NV	Not Visible (values were not within range of instrument, i.e., inversion heights may exist beyond the full scale of the Acoustic Radar)
OE	Operator Error (Field tech leaves switch in wrong position)
OR	Out for Repair (instrument removed from site with no replacement)
OS	Off Scale
PF	Power Failure (generator failure)
RF	Recording System Failure (chart jams, runs out, clock stop)
SE	Special Experiment
SR	System Removed
TR	Trace of Precipitation
TS	Temporary Monitoring Shutdown due to Operations Conflict
UN	Unlimited Ceiling (reported by NWS Stations)
	Blank (causes a space to be printed as in the beginning of a new month before a component starts)
VA	Variable Wind Direction
WR	Weather Related Malfunction (instrument freezes, temperature readings below instrumental detection)

AMBIENT
AIR QUALITY

2.3.1 Ambient Air Quality

The monitoring program for air quality was carried out in accordance with the provisions of the Interim Monitoring Plan approved by the Oil Shale Office (OSO). During this reporting period ambient air stations AB23 and AB26 (through July 27, 1982) monitored gaseous constituents.

Station AB23 data are presented for May - December, 1982. Station AB26 is to be reported on an "as can" basis. No data for Station AB26 are reported in this document.

GASEOUS
CONSTITUENTS

2.3.1.1 Gaseous Constituents

This section contains summary tables and figures, and trend analyses for air quality data for Station AB23

Table/Figure No.	Description	Page No.
Table 2.3.1.1-1	Quarterly Summary, March - May, 1982	II-8
Table 2.3.1.1-2	Quarterly Summary, June - August, 1982	II-9
Table 2.3.1.1-3	Quarterly Summary, September - November, 1982	II-10
Table 2.3.1.1-4	Monthly Arithmetric Ambient Gaseous and Particulate Concentrations	II-11
	Maximum Gaseous Concentrations:	
Table 2.3.1.1-5	NO_x, 1-hour	II-12
Table 2.3.1.1-6	NO, 1-hour	II-13
Table 2.3.1.1-7	NO_2, 1-hour	II-14
Table 2.3.1.1-8	O_3, 1-hour	II-15
Table 2.3.1.1-9	CO, 1-hour and 8-hour	II-16
Table 2.3.1.1-10	SO_2, 1-hour, 3-hour, and 24-hour	II-17
Table 2.3.1.1-11	H_2S, 1-hour	II-18
Table 2.3.1.1-12	Oxidants Summary	II-19
	Ozone Quarterly Concentration Roses	
Figure 2.3.1.1-1	January - March, 1982	II-20
Figure 2.3.1.1-2	April - June, 1982	II-20
Figure 2.3.1.1-3	July - September, 1982	II-21
Figure 2.3.1.1-4	October - December, 1982	II-21
Figure 2.3.1.1-5	Ozone Annual Concentration Rose, 1982	II-22
Table 2.3.1.1-13	Summary of Air Quality Trend Analysis	II-23

TABLE 2.3.1.1-1

QUARTERLY SUMMARY (MARCH 1982 - MAY 1982)
($\mu g/m^3$)
STATION AB23

Parameter	Average	Maximum 24-Hour			Maximum 8-Hour			Maximum 3-Hour			Maximum 1-Hour		
		Value	Date	Time	Value	Date	Time	Value	Date	Time	Value	Date	Time
H_2S	1.2										10.0		(2)
SO_2	1.5	13.0	3/30/82	1100				15.7	3/29/82	1700	16.0		(3)
Particulate	19.8	43.5	5/31/82	0100									
O_3	(1)										137.3	5/19/82	1500
NO_x	9.0										105.0	5/13/82	0200
NO	2.7										40.0	5/13/82	0200
NO_2	4.8										49.0	5/13/82	0100
CO	20.5				200.0	5/24/82	1700				600.0	5/24/82	2100

(1) <75% data for quarter, therefore no average reported.
(2) Maximum 1-hour concentration of H_2S occurred 4 times: 3/22/82 @ 1400, 1500, 1600, 1700.
(3) Maximum 1-hour concentration of SO_2 occurred 6 times: 3/29/82 @ 1700, 1800, 1900, 2200, 2400; 5/6/82 @ 1300.

TABLE 2.3.1.1-2

QUARTERLY SUMMARY (JUNE 1982 - AUGUST 1982)
($\mu g/m^3$)
STATION AB23

Parameter	Average	Maximum 24-Hour Value	Maximum 24-Hour Date	Maximum 24-Hour Time	Maximum 8-Hour Value	Maximum 8-Hour Date	Maximum 8-Hour Time	Maximum 3-Hour Value	Maximum 3-Hour Date	Maximum 3-Hour Time	Maximum 1-Hour Value	Maximum 1-Hour Date	Maximum 1-Hour Time
H_2S	1.4										8.0		(2)
SO_2	2.4	8.3	8/18/82	1300				14.0	8/18/82	1300	21.0	6/11/82	2000
Particulate	23.7	51.4	6/08/82	0100									
O_3	75.1										143.0	8/07/82	2400
NO_x	3.1										103.0	6/11/82	2000
NO	1.4										35.0	6/11/82	2000
NO_2	1.0										49.0	6/11/82	2000
CO	17.6				100.0		(1)				200.0		(3)

(1) Maximum 8-hour concentration of CO occurred 25 times: refer to monthly diurnal tables for times of occurrences.

(2) Maximum concentration of H_2S occurred 10 times: 7/1/82 @ 0800, 1900, 2000; 7/2/82 @ 2400; 7/3/82 @ 1200; 8/5/82 @ 1400, 1500; 8/6/82 @ 2200, 2300; and 8/18/82 @ 1400.

(3) Maximum concentration of CO occurred 4 times: 6/26/82 @ 0700, 0800; 8/18/82 @ 1100; 8/23/82 @ 2400.

TABLE 2.3.1.1-3

QUARTERLY SUMMARY (Sept. 1982 - Nov. 1982)
($\mu g/m^3$)

STATION AB23

Parameter	Average	Maximum 24-hour Value	Maximum 24-hour Date	Maximum 24-hour Time	Maximum 8-hour Value	Maximum 8-hour Date	Maximum 8-hour Time	Maximum 3-hour Value	Maximum 3-hour Date	Maximum 3-hour Time	Maximum 1-hour Value	Maximum 1-hour Date	Maximum 1-hour Time
H_2S	0.7										10.0	11/21/82	(1)
SO_2	0.7	4.6	11/23/82	1700				11.3	11/17/82	1100	13.0	11/17/82	1100
Particulate	11.1	26.9	10/18/82	0100									
O_3	61.3										104.0	9/04/82	1800
NO_x	1.3										8.0		(2)
NO	0.3										5.0	10/27/82	1600
NO_2	1.3										8.0	11/30/82	1800
CO	11.3				100.0	(4)					300.0	10/30/82	(3)

(1) Maximum 1-hour concentration of H_2S occurred 3 times; 11/21/82 @ 0600, 1400, and 1600.
(2) Maximum 1-hour concentration of NO_x occurred 6 times; refer to monthly diurnal tables for times of occurrences.
(3) Maximum 1-hour concentration of CO occurred 2 times; 10/30/82 @ 0800 and 0900.
(4) Maximum 8-hour concentration of CO occurred >15 times; refer to monthly diurnal tables for times of occurrences.

TABLE 2.3.1.1-4

MONTHLY ARITHMETIC AMBIENT GASEOUS AND PARTICULATE CONCENTRATIONS ($\mu g/m^3$)

Station AB23

1982

Constituent	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	AVERAGE
NO	5.0	(1)	4.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0	1.0	1.7
NO_2	5.0	(1)	5.0	5.0	5.0	2.0	0.0	0.0	1.0	2.0	1.0	4.0	2.7
O_3	66.0	69.0	(IM)	78.0	74.0	79.0	73.0	74.0	56.0	64.0	64.0	62.0	69.0
CO	13.4	7.0	18.7	32.7	28.0	20.0	21.0	10.0	12.0	13.0	9.0	5.0	9.8
SO_2	1.0	2.0	3.0	0.0	0.0	2.0	3.0	2.0	1.0	0.0	1.0	2.0	1.4
H_2S	2.0	1.0	3.0	0.0	0.0	1.0	1.0	2.0	1.0	0.0	1.0	3.0	1.3
Particulate	4.1	7.6	1.2	18.9	22.6	39.4	17.4	15.1	18.4	7.2	3.6	4.0	13.3

(IM) Instrument Malfunction
(1) <50% data

TABLE 2.3.1.1-5

MAXIMUM CONCENTRATIONS OF NO_x, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	71		86	51	105	103	*	*	*	*	*	13
Date	1/9/82		3/4/82	4/18/82	5/13/82	6/11/82						12/9/82
Time (MST)	1100	(1)	0100	2100	0200	2000						1100
Wind Direction(DEG)	315		322	320	316	322						285
Wind Speed (MPS)	0		3	4	4	4						1

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

(1) >50% data missing due to Instrument Malfunction and Out for Repair. A peak of 58 $\mu g/m^3$ occurred on 2/1/82 at 0100; this value is questionable.

TABLE 2.3.1.1-6

MAXIMUM CONCENTRATIONS OF NO, 1982

Station AB23

	By Month											
Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value (μg/m3)	29	20	29	18	40	35	*	*	*	*	*	*
Date	1/9/82	2/1/82	3/5/82	4/18/82	5/13/82	6/11/82						
Time	1100	0100	0800	2100	0200	2000						
Wind Direction(DEG)	315	321	333	320	316	322						
Wind Speed (MPS)	0	2	3	4	4	4						

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

TABLE 2.3.1.1-7

MAXIMUM CONCENTRATIONS OF NO_2, 1982

Station AB23

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	By Month											
1-Hour Maximum												
Value ($\mu g/m^3$)	26		47	24	49	49	*	*	*	*	*	11
Date	1/9/82		3/4/82	4/17/82	5/13/82	6/11/82						12/10/82
Time	1100	(1)	0100	0300	0100	2000						(1)
Wind Direction(DEG)	315		322	(cm)	321	322						298
Wind Speed (MPS)	0		3	(cm)	5	4						2

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

(cm) Calm

(1) >50% data missing due to Instrument Malfunction and Out for Repair. A peak of 28 $\mu g/m^3$ occurred on 2/1/82 at 0100; this value is questionable.

TABLE 2.3.1.1-8

MAXIMUM CONCENTRATIONS OF OZONE, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value (μg/m3)	125	133	(1)	108	137	129	110	143	104	100	88	82
Date	1/15/82	2/10/82		4/17/82	5/19/82	6/5/82	7/14/82	8/7/82	9/4/82	10/7/82	11/7/82	12/14/82
Time (MST)	1000	0700		1000	1500	1200	1800	2400	1800	1800	(2)	1300
Wind Direction(DEG)	234	264		227	291	188	258	152	226	217	215	
Wind Speed (MPS)	4	1		3	3	9	2	3	4	4	5	0

(1) <25% data due to Instrument Malfunction.
(2) Maximum concentration occurred 2 times: 11/7/82 @ 1500, 1600.

TABLE 2.3.1.1-9

MAXIMUM CONCENTRATIONS OF CO, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	200	200	100	200	600	*	*	*	*	300	*	*
Date	(1)	2/24/82	(3)	4/5/82	5/24/82					10/30/82		
Time (MST)		1000		1000	2100					(6)		
Wind Direction(DEG)	203	9	317	80	44							
Wind Speed (MPS)	9	0	2	1	3							
8-Hour Maximum												
Value ($\mu g/m^3$)	200	100	100	100	200	*	*	*	*	*	*	*
Date	1/3/82	(2)	(4)	(5)	5/24/82							
Time (MST)	2300				1700							
Wind Direction(DEG)	223	321	325	121	289							
Wind Speed (MPS)	8	2	2	0	1							

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks, and monthly sliding average tables report 8-hour peaks.

(1) 1-Hour Maximum Concentration occurred 8 times: 1/4/82 @ 0300-0600; 1/5/82 @ 1700; 1/6/82 @ 0500-0600 and 1700.
(2) 8-Hour " " " 5 times: 2/1/82 @ 0100; 2/3/82 @ 2400; 2/4/82 @ 0800; 2/5/82 @ 0400; 2/24/82 @ 0500.
(3) 1-Hour " " " 59 times: refer to March diurnal table.
(4) 8-Hour " " " >5 times: 3/5/82 @ 0600; 3/9/82 @ 1300; 3/22/82 @ 1000; 3/23/82 @ 2300; 3/24/82 @ 0700.
(5) 8-Hour " " " >5 times: 4/2/82 @ 2300; 4/5/82 @ 0300; 4/10/82 @ 2300; 4/12/82 @ 2400; 4/14/82 @ 2300.
(6) 1-Hour " " " 2 times: 10/20/82 @ 0800, 0900.

TABLE 2.3.1.1-10

MAXIMUM CONCENTRATIONS OF SO_2, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value (μg/m^3)	10.0	10.0	16.0	10.0	16.0	21.0	8.0	16.0	*	*	13.0	13.0
Date	1/12/82	(2)	(4)	4/9/82	5/6/82	6/11/82	(6)	8/18/82			11/17/82	12/30/82
Time (MST)	1200			1700	1300	2000		1400			1100	1500
Wind Direction(DEG)	322	325	265	310		322		303			214	308
Wind Speed (MPS)	3	2	1	5	4	4		3			4	2
3-Hour Maximum												
Value (μg/m^3)	7.9	8.7	15.7	8.7	7.0	13.1	7.9	14.0	*	*	11.3	11.3
Date	1/18/82	(3)	3/29/82	4/9/82	(5)	6/11/82	7/1/82	8/18/82			11/17/82	12/30/82
Time (MST)	(1)		1700	1600		1800	1400	1300			1100	1400
Wind Direction(DEG)	214	9	242	307		297	194	282			214	301
Wind Speed (MPS)	8	0	9	5		4	8	2			4	3
24-Hour Maximum												
Value (μg/m^3)	5.8	4.6	9.5	4.8	1.3	6.4	5.7	8.3	3.9	*	4.6	6.2
Date	1/17/82	2/24/82	3/29/82	4/8/82	5/19/82	6/24/82	7/1/82	8/18/82	9/2/82		11/23/82	12/30/82
Time (MST)	2100	1900	0100	2100	2000	1400	0700	1300	0700		1700	1300
Wind Direction(DEG)	206	260	185	338	310	203	189	282	Calm		294	306
Wind Speed (MPS)	4	1	10	3	2	2	1	2	0		2	3

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks, and monthly sliding average tables report 3-hour and 24-hour peaks.

(1) 3-Hour maximum concentration occurred 2 times: 1/18/82 @ 0800 and 1100.
(2) 1-Hour " " " 2 times: 2/24/82 @ 1200; 2/25/82 @ 1200.
(3) 3-Hour " " " 2 times: 2/24/82 @ 1000; 2/25/82 @ 1100.
(4) 1-Hour " " " 2 times: 3/29/82 @ 2200 and 2400.
(5) 3-Hour " " " 2 times: 5/6/82 @ 1300; 5/28/82 @ 1900.
(6) 1-Hour " " " 11 times: refer to monthly diurnal table for times of occurrences.

TABLE 2.3.1.1-11

MAXIMUM CONCENTRATIONS OF H_2S, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	11	10	10	6	*	6	8	8	7	6	10	21
Date		2/24/82	3/22/82	4/8/82		6/10/82	(4)	(5)	(6)	10/7/82	11/21/82	12/13/82
Time (MST)	(1)	1000	(2)	(3)		1500				1500	(7)	1200
Wind Direction(DEG)	262	9	230	161		324				197	200	215
Wind Speed (MPS)	1	0	2	1		3				9	4	5

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

(1) Maximum concentration occurred 2 times: 1/7/82 @ 1900; 1/14/82 @ 1200.
(2) " " " 4 times: 3/22/82 @ 1400-1700.
(3) " " " 2 times: 4/8/82 @ 1300-1400.
(4) " " " 4 times: refer to monthly diurnal table for times of occurrences.
(5) " " " 5 times: refer to monthly diurnal table for times of occurrences.
(6) " " " 3 times: 9/21/82 @ 1500; 9/28/82 @ 0900, 1000.
(7) " " " 3 times: 11/21/82 @ 0600, 1400 and 1600.

TABLE 2.3.1.1-12

OXIDANTS (O_3)

C-b TRACT - RIO BLANCO COUNTY

For Calendar Year 1982 - Trailer 023

Number Hourly Observations: 7634

Annual Arithmetic Mean ($\mu g/m^3$): 68.7

5 Highest Monthly Averages ($\mu g/m^3$):				
1.	143	8/7/82	Hr. Ending	2400
2.	137	5/19/82	" "	1500
3.	135	5/19/82	" "	1600
4.	135	8/7/82	" "	2300
5.	133	2/10/82	" "	0700

Number of Hourly Concentrations in Ranges:

Range	No. of Values
0.0 - 2.9 ($\mu g/m^3$)	1126
3.0 - 20.9	10
21.0 - 40.9	234
41.0 - 60.9	1994
61.0 - 80.9	3969
81.0 - 100.9	1281
101.0 - 120.9	130
121.0 - 140.9	15
141.0 - 160.0	1
GREATER THAN 160.0	0

FIGURE 2.3.1.1-1

AB23 QUARTERLY OZONE CONC. ROSE
JAN '82 - MAR '82

TOTAL % OF CALMS DISTRIBUTED (1.93%)
TOTAL NO. OF 1-HOUR SAMPLES - 1296

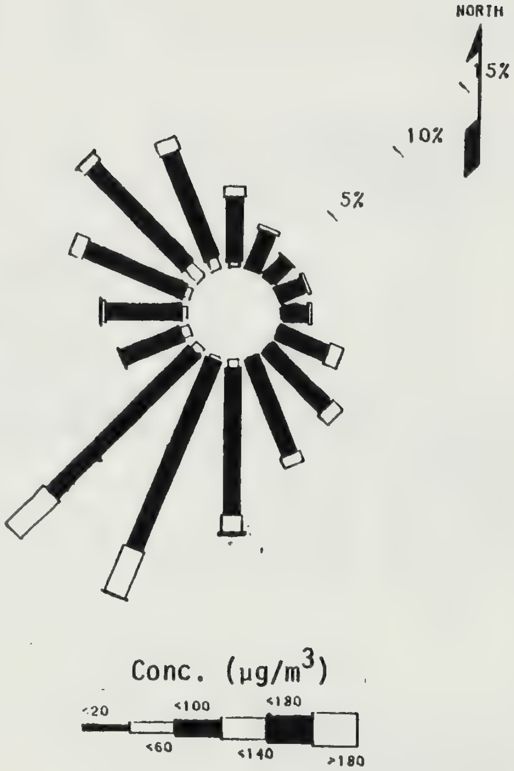


FIGURE 2.3.1.1-2

AB23 QUARTERLY OZONE CONC. ROSE
APR '82 - JUN '82

TOTAL % OF CALMS DISTRIBUTED (1.54%)
TOTAL NO. OF 1-HOUR SAMPLES - 1953

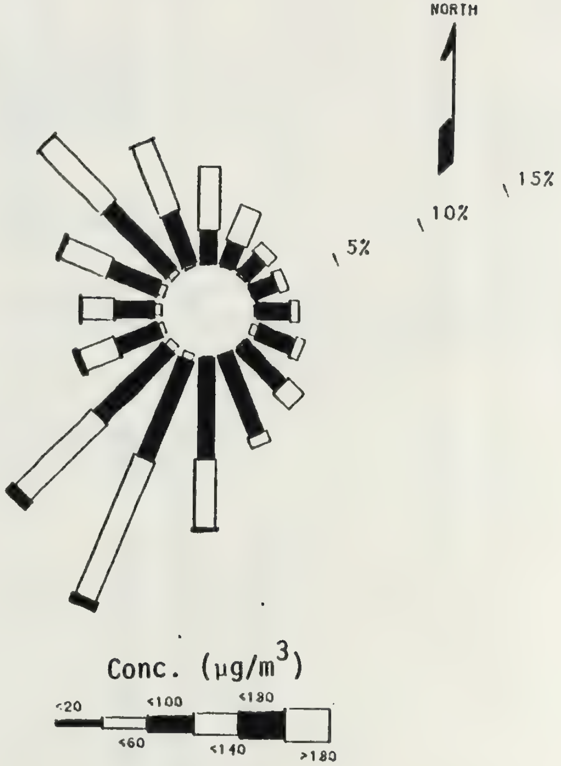


FIGURE 2.3.1.1-3

AB23 QUARTERLY OZONE CONC. ROSE
JUL '82 - SEP '82

TOTAL % OF CALMS DISTRIBUTED (1.82%)
TOTAL NO. OF 1-HOUR SAMPLES - 2143

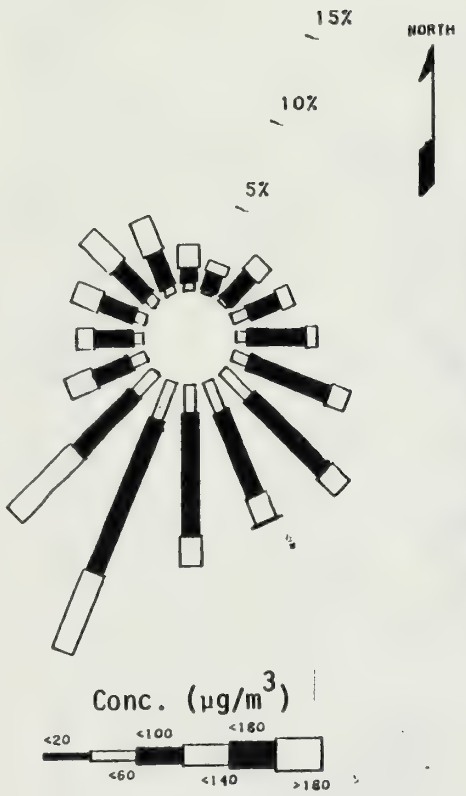


FIGURE 2.3.1.1-4

AB23 QUARTERLY OZONE CONC. ROSE
OCT '82 - DEC '82

TOTAL % OF CALMS DISTRIBUTED (2.11%)
TOTAL NO. OF 1-HOUR SAMPLES - 2135

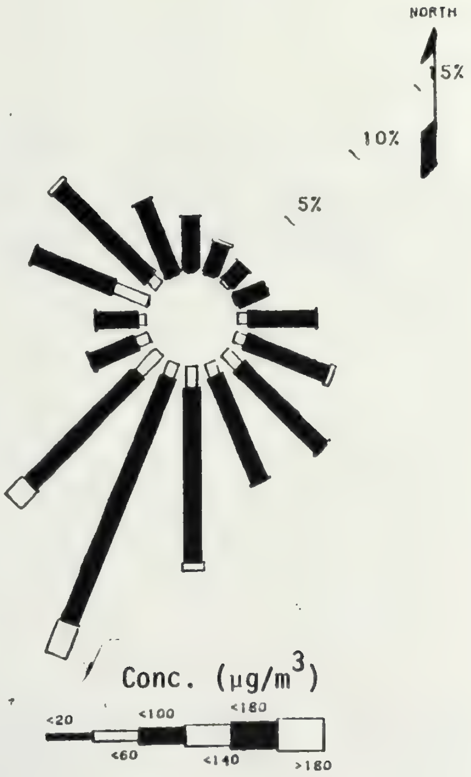


FIGURE 2.3.1.1-5

AB23 ANNUAL OZONE CONC. ROSE
JAN '82 - DEC '82

TOTAL % OF CALMS DISTRIBUTED (1.85%)
TOTAL NO. OF 1-HOUR SAMPLES - 7527

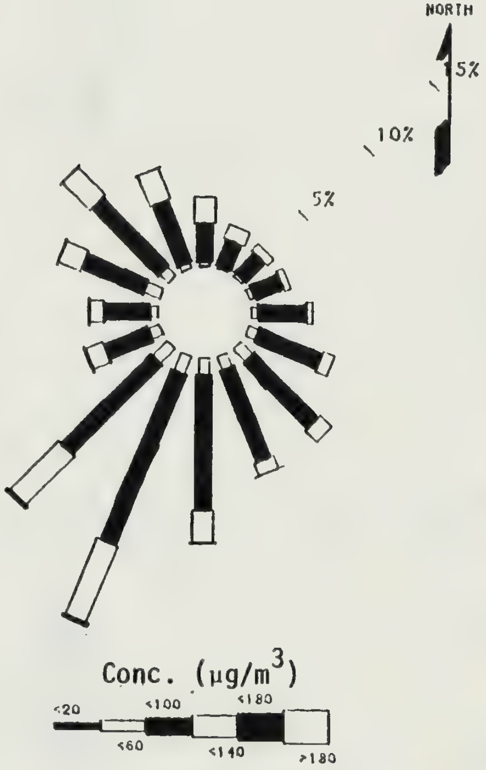


TABLE 2.3.1.1-13

SUMMARY OF AIR QUALITY TREND ANALYSIS, STATION AB23

Indicator Variable	Short-Term*	Long-Term**
NO_x	1. 2.68/327	1.45/2519
	2. 0.0001	0.29
	3. -0.0161	
	4. 0.48	
NO	1. 1.31/327	0.88/2560
	2. 0.0001	0.17
	3. -0.0102	
	4. 0.60	
NO_2	1. 1.43/330	0.80/2522
	2. 0.0001	0.0001
	3. -0.0056	0.0002
	4. 0.20	0.01
O_3	1. 35.03/330	37.33/2834
	2. 0.0001	0.0001
	3. -0.0156	0.0014
	4. 0.08	0.01
CO	1. 14.81/355	290.79/2413
	2. 0.0001	0.0001
	3. -0.0448	-0.38
	4. 0.06	0.36
SO_2	1. 0.58/357	0.37/2809
	2. 0.24	0.0001
	3.	0.00009
	4.	0.008
H_2S	1. 0.98/354	0.55/2665
	2. 0.93	0.17
	3.	
	4.	

1. Mean/Number of paired observations
2. $\hat{\alpha}$ - to be compared with selected α. ($\alpha = 0.05$); if $\hat{\alpha} < \alpha$, trend exists
3. Slope - slope is (μg/m3) per day
4. r^2 value

* 1982

** 1975 - 1982

PARTICULATES

2.3.1.2 Particulates

This section presents summary tables of 24-hour maximum concentrations for suspended particulates at Stations AB23 and AB26. The monthly data samples are presented in each of the monthly data reports. Monitoring at Station AB26 was discontinued on July 27, 1982.

Also included in this section are a frequency distribution histogram of concentrations of particulate matter and particulate concentration roses.

Following is a list of tables and figures for this section:

Table/Figure No.	Description	Page No.
Table 2.3.1.2-1	Maximum Concentrations of Particulates Station AB23	II-26
Table 2.3.1.2-2	Maximum Concentrations of Particulates Station AB26	II-26
Figure 2.3.1.2-1	Composite Particulate Frequency Distribution	II-27
Table 2.3.1.2-3	Particulate Annual Summary	II-28

TABLE 2.3.1.2-1

MAXIMUM CONCENTRATIONS OF PARTICULATES, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
24-Hour Maximum Value ($\mu g/m^3$)	6.3	9.0	12.1	42.2	25.6	30.2	28.1	25.7	21.5	26.9	6.9	6.4
Date	1/19/82	2/8/82	3/24/82	4/1/82	5/31/82	6/8/82	7/18/82	8/19/82	9/24/82	10/18/82	11/15/82	12/5/82

TABLE 2.3.1.2-2

MAXIMUM CONCENTRATIONS OF PARTICULATES, 1982

STATION AB26

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
24-Hour Maximum Value ($\mu g/m^3$)	7.9	18.6	10.9	52.4	49.0	30.9	28.3	*				
Date	1/4/82	2/28/82	3/24/82	4/1/82	5/11/82	6/20/82	7/18/82					

* Monitoring of particulates at Station AB26 was discontinued on 7/27/82 in accordance with the requirements of the Interim Monitoring Program.

COMPOSITE PARTICULATE

FREQUENCY DISTRIBUTION 1982

STATION AB23

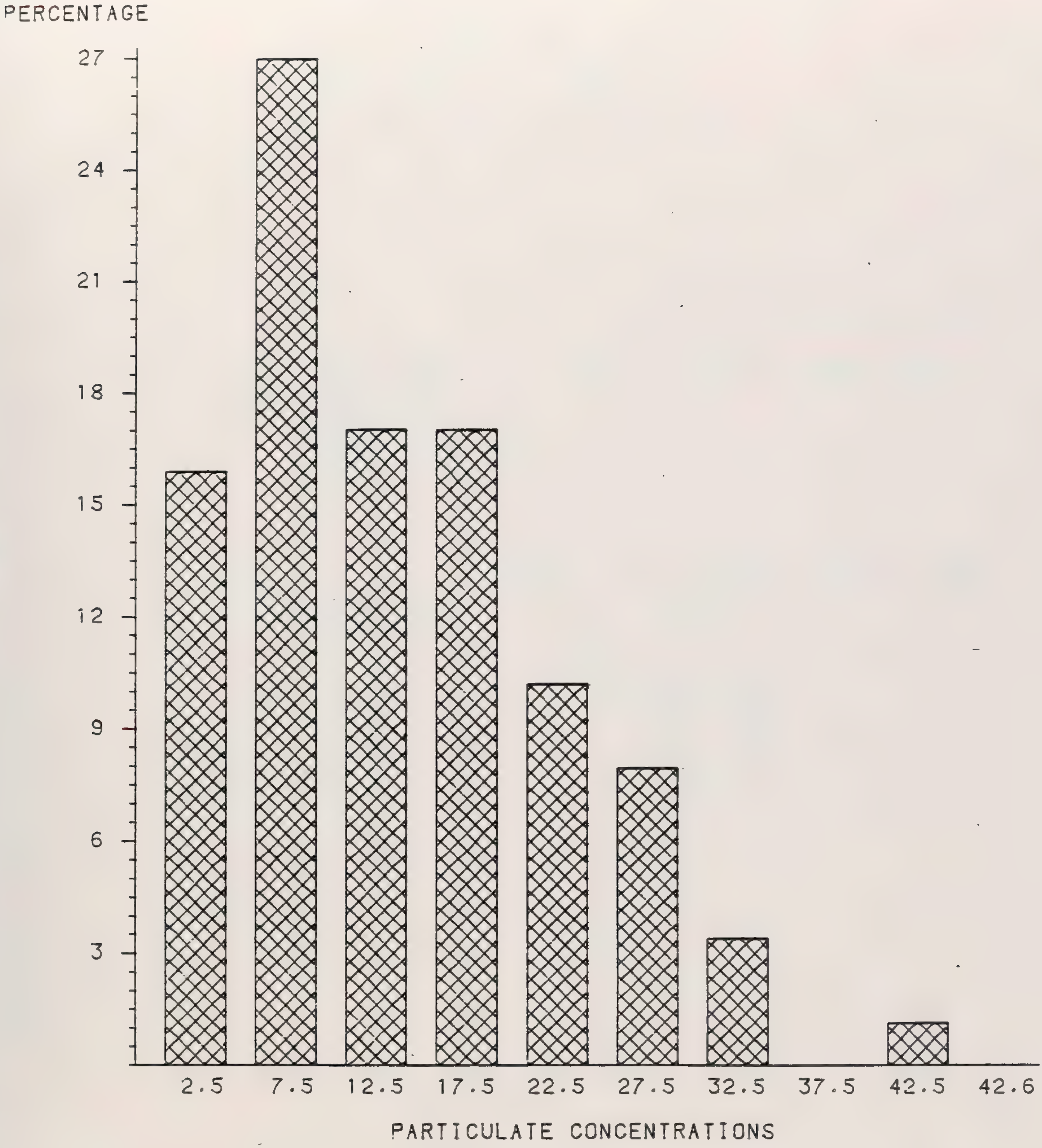


FIGURE 2.3.1.2-1

TABLE 2.3.1.2-1

MAXIMUM CONCENTRATIONS OF PARTICULATES, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
24-Hour Maximum Value ($\mu g/m^3$)	6.3	9.0	12.1	42.2	25.6	30.2	28.1	25.7	21.5	26.9	6.9	6.4
Date	1/19/82	2/8/82	3/24/82	4/1/82	5/31/82	6/8/82	7/18/82	8/19/82	9/24/82	10/18/82	11/15/82	12/5/82

TABLE 2.3.1.2-2

MAXIMUM CONCENTRATIONS OF PARTICULATES, 1982

STATION AB26

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
24-Hour Maximum Value ($\mu g/m^3$)	7.9	18.6	10.9	52.4	49.0	30.9	28.3	*				
Date	1/4/82	2/28/82	3/24/82	4/1/82	5/11/82	6/20/82	7/18/82					

* Monitoring of particulates at Station AB26 was discontinued on 7/27/82 in accordance with the requirements of the Interim Monitoring Program.

COMPOSITE PARTICULATE

FREQUENCY DISTRIBUTION 1982

STATION AB23

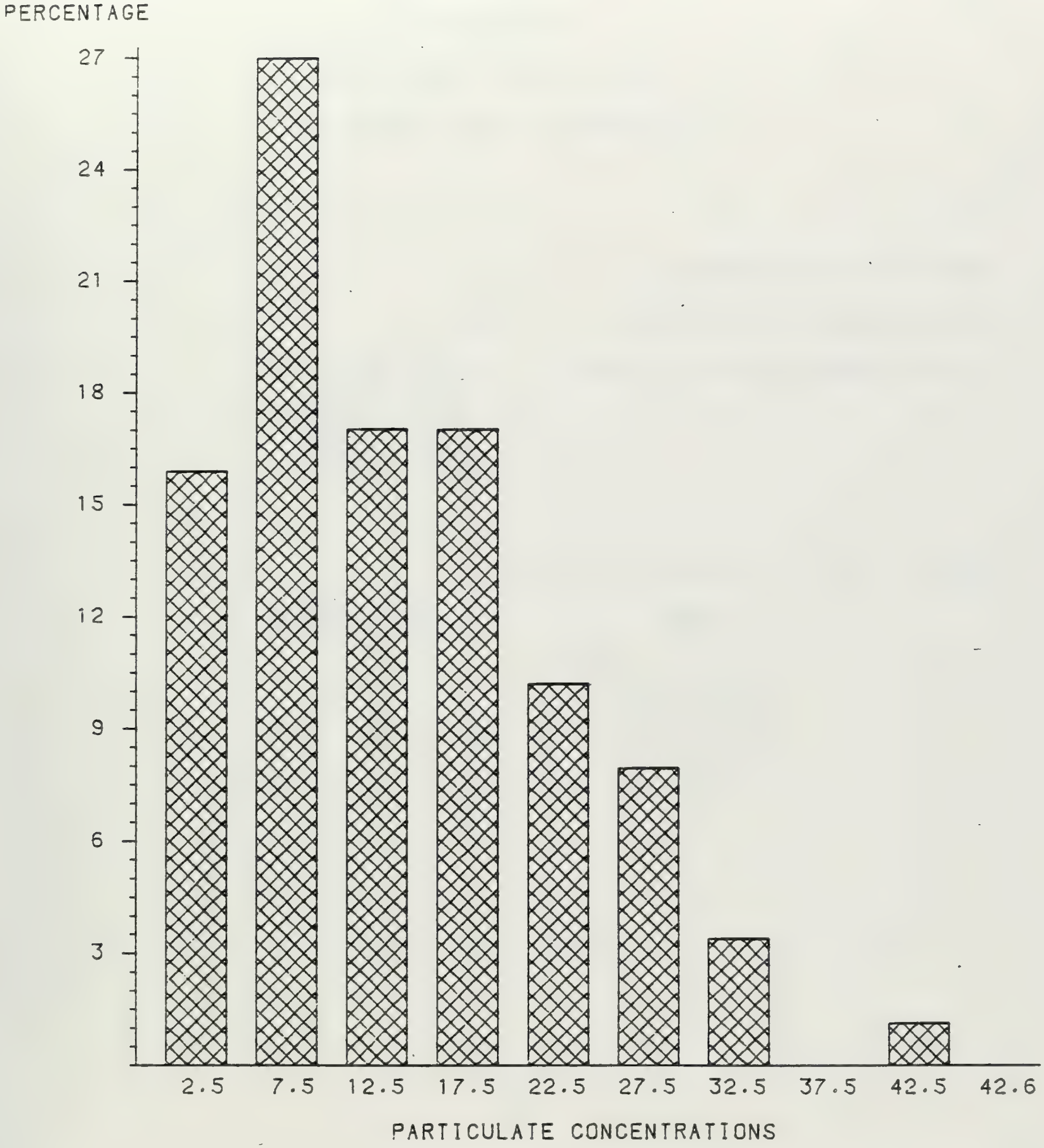


FIGURE 2.3.1.2-1

TABLE 2.3.1.2-3

PARTICULATES

C-b TRACT - RIO BLANCO COUNTY

For Calendar Year 1982 - Trailer 023

Number 24-Hour Measurements:	88		
Annual Arithmetic Mean ($\mu g/m^3$):	11.2		
5 Highest Monthly Averages ($\mu g/m^3$):	1.	42.2	4/1/82
	2.	30.2	6/8/82
	3.	28.1	6/28/82
	4.	28.1	7/18/82
	5.	26.9	10/18/82

Number of Hourly Concentrations in Ranges:

Range		No. of Values
<5	$\mu g/m^3$	30
5.0 - 14.9		31
15.0 - 24.9		18
25.0 - 34.9		8
35.0 - 75.9		1
>76		0

TRACE METALS

2.3.2 Trace Metals

No additional studies were conducted during this time period.

2.3.3 Meteorology

During this reporting period meteorological parameters were monitored at three stations; AA23, AB26, and AD20. Station AA23 is a 60-meter meteorological tower, colocated by air quality trailer AB23. Data are collected at the 10-meter, 30-meter, and 60-meter levels. Data at Stations AB26 and AD20 are collected at the 10-meter level.

Monitoring at Station AB26 was discontinued on July 27, 1982. This station is required to be reported on an "as can" basis, and no data are reported after March 1982.

Monitoring at Station AD20 was discontinued on July 26, 1982. Data from April 1982 through July 1982 are reported in this document.

Following is a list of statistical summary tables for meteorological parameters:

Table No.	Description	Page No
2.3.3-1	Two-year Summaries of Meteorological Statistics	II-32
2.3.3-2	Monthly Meteorological Statistics 1974 - 1982 (reported mean is hourly mean)	II-34

TABLE 2.3.3-1

TWO-YEAR SUMMARY OF METEOROLOGICAL STATISTICS

12/1/74 - 11/30/76

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	15529	55.6	21.7	15.0	100.0	470.1	39.0
WS2	16404	7.4	5.5	0.0	44.7	30.4	74.0
WD2	16362	193.2	80.2			6431.9	41.5
TMP2	16419	43.7	18.2	-8.7	87.8	332.6	41.8
BARP	15166	789.3	5.6	767.0	801.0	31.3	0.7
RAIN	0	.	.	.	.	.	.

12/1/76 - 11/30/78

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	13203	55.1	24.1	7.0	100.0	582.5	43.8
WS2	16449	6.9	4.9	0.0	36.0	24.3	72.0
WD2	15971	198.9	80.3			6442.9	40.3
TMP2	15928	46.0	18.1	-7.7	93.4	328.0	39.4
BARP	13795	787.7	5.4	768.0	800.7	29.4	0.7
RAIN	16149	0.2	1.2	0.0	46.0	1.4	749.1

12/1/78 - 11/30/80

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	15637	57.0	24.9	7.0	100.0	622.4	43.8
WS2	16852	6.0	4.3	0.0	40.0	18.8	71.7
WD2	16792	201.3	84.7			7178.2	42.1
TMP2	17008	45.3	19.5	-14.0	95.2	381.2	43.1
BARP	17288	785.1	5.0	725.8	797.1	25.3	0.6
RAIN	15884	0.2	1.2	0.0	42.0	1.4	740.9

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-1 (Contd)

12/1/80 - 5/31/82
TWO YEAR SUMMARY OF METEROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	11412	51.5	20.5	1.0	100.0	419.0	39.8
WS2	12168	5.6	4.2	0.0	25.0	17.7	74.9
WD2	12169	204.3	80.4			6465.1	39.4
TMP2	12428	43.8	16.6	-16.0	92.0	274.8	37.9
BARP	10341	785.6	5.4	748.0	801.0	29.0	0.7
RAIN	12145	0.2	1.2	0.0	37.0	1.5	769.8

*
RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{O}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=74 MONTH=12							
RH1	503	69.3	22.6	25.1	100.0	512.6	32.7
WS2	457	8.7	6.8	1.5	44.7	46.1	77.8
WD2	500	221.0	83.7			7012.9	37.9
TMP2	498	25.3	9.1	-3.7	49.6	82.9	36.0
BARP	108	785.9	4.1	776.7	794.9	16.8	0.5
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=1							
RH1	683	68.5	19.9	32.3	100.0	396.3	29.1
WS2	688	7.9	5.3	0.5	32.8	28.1	66.9
WD2	688	202.0	73.4			5384.1	36.3
TMP2	677	22.8	9.5	-6.6	43.8	90.8	41.8
BARP	0	.	.	.	.	.	.
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=10							
RH1	727	42.7	23.2	18.2	98.6	536.0	54.2
WS2	727	8.2	6.6	0.0	33.2	43.9	80.5
WD2	727	186.8	75.8			5742.2	40.6
TMP2	727	46.8	12.8	14.8	71.9	164.1	27.4
BARP	727	790.6	5.2	775.5	799.2	26.6	0.7
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=11							
RH1	711	53.3	21.9	20.0	98.2	478.1	41.0
WS2	711	7.4	5.7	0.3	33.7	32.2	76.8
WD2	711	201.7	78.7			6198.3	39.0
TMP2	711	32.1	13.0	4.0	63.0	168.4	40.4
BARP	711	789.1	7.4	767.0	800.5	55.3	0.9
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=12							
RH1	703	62.8	12.0	33.6	89.4	144.7	19.1
WS2	703	5.8	4.9	0.2	25.4	23.6	83.8
WD2	703	181.7	75.4			5681.9	41.5
TMP2	703	28.3	9.7	6.6	50.0	93.2	34.2
BARP	702	791.2	5.9	770.5	799.0	35.0	0.7
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=2							
RH1	654	75.2	16.2	37.2	100.0	262.3	21.5
WS2	654	8.1	5.0	0.7	24.3	24.7	61.1
WD2	654	197.8	74.6			5560.0	37.7
TMP2	657	24.1	9.0	-1.7	42.9	81.5	37.5
BARP	656	785.1	5.1	774.0	795.9	26.2	0.7
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=3							
RH1	522	74.7	17.8	38.1	100.0	316.4	23.8
WS2	549	10.2	5.8	0.0	38.7	33.8	57.2
WD2	549	208.1	68.0			4630.1	32.7
TMP2	543	31.2	11.2	-7.3	50.8	125.6	35.9
BARP	548	782.2	6.3	768.0	793.0	39.1	0.8
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=4							
RH1	711	69.5	22.2	34.7	100.0	494.3	32.0
WS2	711	9.5	6.7	0.6	43.6	45.1	70.5
WD2	711	211.5	71.9			5175.4	34.0
TMP2	708	34.9	11.0	6.5	62.9	120.8	31.4
BARP	711	782.4	4.6	769.0	792.0	21.1	0.6
RAIN	0	.	.	.	.	.	.

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

** Months not in sequential order.

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=75 MONTH=5							
RH1	743	67.3	21.4	32.2	100.0	458.1	31.8
WS2	743	9.1	6.2	0.0	38.8	38.6	68.6
WD2	739	206.8	78.2			6120.8	37.5
TMP2	742	46.0	10.3	22.6	71.8	106.8	22.5
BARP	744	785.8	4.9	771.0	793.1	23.9	0.6
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=6							
RH1	431	68.7	21.4	35.8	100.0	456.3	31.1
WS2	615	8.3	5.8	0.9	28.0	33.8	69.8
WD2	615	194.3	81.2			6587.4	41.8
TMP2	614	56.1	11.3	34.9	83.6	128.5	20.2
BARP	616	788.2	3.9	774.0	794.0	15.5	0.5
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=7							
RH1	6	28.2	0.6	27.3	29.0	0.3	2.0
WS2	703	6.6	3.9	0.3	25.0	15.1	58.6
WD2	703	169.3	86.4			7468.8	51.1
TMP2	702	67.2	7.9	50.1	84.8	63.0	11.8
BARP	708	791.3	2.0	786.0	795.9	4.1	0.3
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=8							
RH1	694	32.8	16.0	15.0	93.8	254.8	48.7
WS2	694	8.0	5.0	0.5	22.3	25.0	62.4
WD2	694	184.6	76.4			5835.4	41.4
TMP2	694	64.8	8.8	40.5	82.8	77.6	13.6
BARP	695	791.4	1.6	781.2	795.0	2.5	0.2
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=9							
RH1	672	38.9	18.3	19.3	94.9	334.5	47.0
WS2	672	6.1	4.1	0.3	21.0	16.9	67.4
WD2	672	193.3	91.3			8331.2	47.2
TMP2	672	56.2	10.0	29.3	78.5	99.0	17.7
BARP	672	793.5	2.6	787.0	800.6	6.5	0.3
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=1							
RH1	725	61.4	14.4	23.5	88.2	207.2	23.5
WS2	726	5.1	4.5	0.0	27.5	19.9	88.8
WD2	726	192.3	77.5			6013.5	40.3
TMP2	726	24.2	10.7	-8.7	47.8	115.5	44.5
BARP	726	791.3	5.5	777.0	801.0	30.5	0.7
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=10							
RH1	742	47.9	14.5	28.8	90.0	211.1	30.4
WS2	742	5.1	4.1	0.0	22.5	16.6	79.8
WD2	733	200.8	90.6			8210.1	45.1
TMP2	742	42.6	10.9	16.5	71.0	118.0	25.5
BARP	743	791.6	3.4	784.0	799.0	11.3	0.4
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=11							
RH1	717	52.5	14.1	27.6	89.7	198.8	26.9
WS2	717	4.3	3.2	0.0	17.8	10.5	76.4
WD2	709	193.0	92.3			8512.3	47.8
TMP2	717	34.2	13.4	-6.4	59.1	179.9	39.2
BARP	697	791.9	4.7	777.0	800.0	22.3	0.6
RAIN	0	.	.	.	.	.	.

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=76 MONTH=2							
RH1	696	57.4	19.2	22.6	89.6	368.6	33.5
WS2	696	8.7	6.3	0.4	34.2	39.5	72.2
WD2	693	192.2	62.0			3838.0	32.2
TMP2	696	31.7	9.3	5.3	48.8	87.3	29.5
BARP	689	787.9	6.4	774.0	800.0	40.9	0.8
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=3							
RH1	723	55.7	19.0	23.6	90.6	360.0	34.0
WS2	723	7.8	6.2	0.1	28.9	38.4	79.6
WD2	722	203.1	76.9			5919.6	37.9
TMP2	723	29.6	10.7	6.1	52.2	115.5	36.3
BARP	721	785.2	6.0	770.0	795.0	35.8	0.8
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=4							
RH1	636	51.6	22.1	20.8	95.1	490.6	42.9
WS2	636	8.4	5.7	0.0	25.4	32.6	68.3
WD2	632	195.4	74.5			5554.9	38.1
TMP2	636	41.7	8.4	22.6	63.7	70.3	20.1
BARP	635	785.9	4.8	770.7	796.0	23.3	0.6
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=5							
RH1	675	50.8	19.4	23.3	90.8	377.6	38.2
WS2	675	6.5	4.4	0.3	23.8	19.1	67.1
WD2	661	189.4	90.5			8187.2	47.8
TMP2	675	52.0	8.9	27.6	74.8	79.5	17.2
BARP	603	789.6	3.0	783.0	796.0	9.1	0.4
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=6							
RH1	716	43.0	17.3	26.9	96.1	299.4	40.3
WS2	716	9.5	5.8	0.8	27.7	33.4	61.1
WD2	710	183.0	75.7			5725.4	41.3
TMP2	716	59.5	11.9	21.8	82.6	140.8	19.9
BARP	701	789.8	2.9	782.0	797.0	8.5	0.4
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=7							
RH1	720	45.6	14.3	28.8	93.9	204.1	31.3
WS2	720	6.5	3.7	0.4	22.1	13.8	57.2
WD2	707	175.3	86.0			7404.1	49.1
TMP2	721	69.1	8.8	50.5	87.8	77.7	12.8
BARP	647	792.4	2.1	787.0	797.1	4.2	0.3
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=8							
RH1	700	47.8	14.8	29.6	95.8	220.3	31.1
WS2	707	8.7	5.8	0.2	36.8	33.3	66.0
WD2	695	173.4	69.7			4854.6	40.2
TMP2	700	64.1	8.3	43.6	81.2	68.7	12.9
BARP	707	793.1	2.6	785.2	798.0	6.5	0.3
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=9							
RH1	719	56.4	19.1	30.3	94.0	364.8	33.9
WS2	719	5.5	3.9	0.0	20.2	15.3	70.7
WD2	708	191.4	84.3			7108.6	44.1
TMP2	719	56.1	10.0	35.1	81.7	100.7	17.9
BARP	719	792.9	2.5	786.0	801.0	6.4	0.3
RAIN	0	.	.	.	.	.	.

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M ($^{\circ}$F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=76	MONTH=12						
RH1	742	52.7	14.1	29.2	89.0	197.7	26.7
WS2	742	4.8	3.6	0.2	24.3	13.1	75.4
WD2	740	189.0	76.4			5835.3	40.4
TMP2	669	26.0	7.8	8.0	46.0	60.8	30.0
BARP	742	790.5	4.8	779.0	800.7	23.4	0.6
RAIN	535	0.1	0.3	0.0	3.0	0.1	385.4
YEAR=77	MONTH=1						
RH1	739	73.9	14.6	43.0	100.0	213.4	19.8
WS2	739	5.2	4.0	0.0	19.8	16.2	76.9
WD2	739	180.1	71.9			5163.0	39.9
TMP2	739	22.6	9.4	-7.7	44.3	88.5	41.6
BARP	739	788.1	4.8	773.0	799.9	22.8	0.6
RAIN	686	0.1	0.5	0.0	5.0	0.3	442.8
YEAR=77	MONTH=10						
RH1	0	.	.	.	.	.	.
WS2	735	5.2	3.8	0.6	20.9	14.6	73.1
WD2	730	191.4	65.0			4230.5	34.0
TMP2	727	40.2	9.7	10.0	72.0	93.2	24.0
BARP	0	.	.	.	.	.	.
RAIN	736	0.1	1.4	0.0	30.0	1.8	1137.5
YEAR=77	MONTH=11						
RH1	0	.	.	.	.	.	.
WS2	660	6.8	5.0	0.0	24.0	24.5	72.6
WD2	662	205.5	72.1			5202.6	35.1
TMP2	662	38.1	12.8	1.0	64.0	164.5	33.6
BARP	0	.	.	.	.	.	.
RAIN	705	0.2	1.2	0.0	13.0	1.5	602.6
YEAR=77	MONTH=12						
RH1	531	65.5	23.6	10.0	99.0	555.9	36.0
WS2	479	7.5	5.0	0.5	23.0	24.5	65.6
WD2	455	201.2	70.7			4999.5	35.2
TMP2	467	39.5	9.4	17.4	56.0	88.2	23.8
BARP	0	.	.	.	.	.	.
RAIN	740	0.1	0.8	0.0	11.0	0.6	684.8
YEAR=77	MONTH=2						
RH1	670	64.3	17.4	33.8	100.0	301.8	27.0
WS2	670	5.0	3.5	0.2	24.9	12.5	71.3
WD2	670	209.7	85.7			7347.9	40.9
TMP2	670	28.9	9.4	8.0	53.4	88.0	32.5
BARP	670	790.6	5.3	774.0	798.9	28.0	0.7
RAIN	527	0.1	0.5	0.0	7.0	0.3	512.4
YEAR=77	MONTH=3						
RH1	732	70.2	19.6	37.8	100.0	385.5	28.0
WS2	733	8.1	5.8	0.0	25.8	33.7	72.1
WD2	708	205.6	80.4			6464.8	39.1
TMP2	727	27.7	10.4	4.8	53.6	107.7	37.5
BARP	733	783.9	6.0	770.6	795.7	35.6	0.8
RAIN	680	0.2	1.0	0.0	10.0	1.0	431.7
YEAR=77	MONTH=4						
RH1	716	67.2	22.6	34.5	100.0	509.3	33.6
WS2	716	6.4	4.3	0.3	22.9	18.4	66.7
WD2	716	208.6	87.4			7639.0	41.9
TMP2	716	43.4	12.4	12.8	67.7	153.8	28.6
BARP	716	789.3	5.0	775.8	798.0	25.0	0.6
RAIN	713	0.2	0.9	0.0	10.0	0.8	500.9

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=77 MONTH=5							
RH1	0						
WS2	725	10.2	6.6	0.8	33.3	43.8	65.1
WD2	725	199.3	69.5			4827.9	34.9
TMP2	441	49.4	9.3	28.2	71.8	87.3	18.9
BARP	739	786.1	3.6	776.1	797.0	12.7	0.5
RAIN	705	0.2	1.1	0.0	16.0	1.1	685.3
YEAR=77 MONTH=6							
RH1	0						
WS2	719	7.8	4.7	0.8	20.5	22.3	60.7
WD2	719	197.2	78.7			6188.2	39.9
TMP2	517	67.6	8.8	45.9	82.4	77.5	13.0
BARP	719	791.3	2.2	786.0	797.0	4.8	0.3
RAIN	655	0.0	0.2	0.0	2.0	0.0	628.4
YEAR=77 MONTH=7							
RH1	429	31.6	17.1	7.8	93.2	292.8	54.2
WS2	443	8.9	4.9	1.2	24.2	24.4	55.3
WD2	443	193.9	68.4			4683.4	35.3
TMP2	443	69.6	8.1	52.1	83.2	65.9	11.7
BARP	669	794.2	2.3	789.0	799.0	5.1	0.3
RAIN	667	0.3	2.2	0.0	43.0	4.7	776.4
YEAR=77 MONTH=8							
RH1	694	44.7	23.0	10.7	100.0	529.5	51.5
WS2	608	6.6	4.0	0.8	20.8	15.9	60.3
WD2	415	200.7	85.6			7331.2	42.7
TMP2	640	65.8	10.2	38.0	85.9	103.4	15.5
BARP	728	793.3	2.5	783.7	799.0	6.1	0.3
RAIN	708	0.3	2.2	0.0	38.0	5.0	711.1
YEAR=77 MONTH=9							
RH1	235	34.1	16.1	15.4	99.0	259.4	47.3
WS2	697	7.3	4.5	1.0	23.8	20.3	61.8
WD2	691	194.2	54.4			2957.8	28.0
TMP2	692	58.6	17.3	25.0	93.4	299.7	29.5
BARP	0						
RAIN	716	0.2	1.6	0.0	22.0	2.7	798.8
YEAR=78 MONTH=1							
RH1	722	73.8	15.7	32.0	97.0	247.8	21.3
WS2	735	5.0	3.6	0.0	24.0	12.6	70.8
WD2	692	193.9	80.1			6422.0	41.3
TMP2	709	45.6	5.1	28.0	56.0	26.0	11.2
BARP	377	783.7	6.0	768.1	794.4	35.6	0.8
RAIN	717	0.1	0.5	0.0	4.0	0.2	503.4
YEAR=78 MONTH=10							
RH1	743	44.2	22.4	12.0	97.0	500.2	50.6
WS2	741	5.7	4.5	1.0	32.0	19.9	78.7
WD2	721	200.8	105.2			11075.1	52.4
TMP2	744	50.8	10.7	26.0	77.0	115.2	21.1
BARP	744	786.0	3.0	776.0	792.0	9.3	0.4
RAIN	720	0.0	0.2	0.0	4.0	0.0	1497.7
YEAR=78 MONTH=11							
RH1	613	63.3	22.2	19.0	99.0	494.7	35.1
WS2	714	5.6	4.7	1.0	30.0	21.7	83.2
WD2	696	211.8	85.3			7267.8	40.2
TMP2	720	33.6	12.9	4.0	65.0	167.3	38.5
BARP	720	783.4	4.1	773.0	792.0	16.6	0.5
RAIN	629	0.3	1.5	0.0	18.0	2.1	519.7

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=78 MONTH=2							
RH1	618	70.4	17.1	16.0	96.0	291.0	24.2
WS2	630	5.6	3.7	1.0	20.0	13.6	65.3
WD2	636	187.0	74.4			5541.3	39.8
TMP2	630	27.4	8.1	4.5	43.3	65.3	29.5
BARP	582	785.3	6.6	769.4	798.3	43.1	0.8
RAIN	614	0.2	0.9	0.0	12.0	0.7	509.4
YEAR=78 MONTH=3							
RH1	740	65.9	20.2	20.0	96.0	407.3	30.6
WS2	699	4.9	3.3	0.0	20.0	11.1	68.5
WD2	640	186.2	83.0			6884.7	44.6
TMP2	712	35.6	9.5	12.0	58.3	91.0	26.8
BARP	727	786.2	5.1	774.6	797.0	25.8	0.6
RAIN	699	0.5	1.8	0.0	20.0	3.3	384.7
YEAR=78 MONTH=4							
RH1	720	52.6	22.5	14.0	95.0	506.7	42.8
WS2	690	7.6	4.9	1.0	26.0	23.7	64.0
WD2	661	211.1	70.9			5022.2	33.6
TMP2	696	42.0	8.4	23.0	64.0	70.6	20.0
BARP	696	784.1	3.5	776.0	792.0	12.1	0.4
RAIN	683	0.1	0.8	0.0	9.0	0.6	598.5
YEAR=78 MONTH=5							
RH1	742	48.7	24.8	11.0	94.0	615.6	50.9
WS2	725	8.3	5.1	0.0	29.0	25.6	61.1
WD2	727	206.9	86.6			7504.1	41.9
TMP2	733	48.2	11.5	25.0	75.0	132.2	23.8
BARP	737	783.9	4.8	773.0	795.0	22.7	0.6
RAIN	700	0.2	1.1	0.0	23.0	1.3	642.7
YEAR=78 MONTH=6							
RH1	609	40.9	21.2	12.0	96.0	448.3	51.8
WS2	717	9.2	5.7	0.0	30.0	32.3	61.6
WD2	707	208.5	81.8			6686.9	39.2
TMP2	717	62.2	10.4	36.0	82.0	109.0	16.8
BARP	681	789.3	2.9	782.0	795.0	8.2	0.4
RAIN	598	0.1	0.6	0.0	8.0	0.3	693.2
YEAR=78 MONTH=7							
RH1	744	37.6	20.6	9.0	94.0	425.4	54.9
WS2	699	8.4	4.8	1.0	25.0	22.8	56.9
WD2	691	189.5	83.5			6976.0	44.1
TMP2	696	69.7	8.6	45.0	87.0	74.4	12.4
BARP	650	789.5	2.5	773.0	743.0	6.1	0.3
RAIN	669	0.1	1.8	0.0	46.0	3.3	1501.8
YEAR=78 MONTH=8							
RH1	744	38.2	20.3	7.0	94.0	413.1	53.2
WS2	744	8.5	5.4	0.0	29.0	29.7	63.9
WD2	724	195.1	87.7			7699.7	45.0
TMP2	744	65.3	10.0	36.0	85.0	99.8	15.3
BARP	737	789.1	4.4	776.0	796.0	19.5	0.6
RAIN	638	0.0	0.6	0.0	13.0	0.3	1848.3
YEAR=78 MONTH=9							
RH1	720	44.4	19.8	8.0	97.0	391.6	44.5
WS2	689	6.6	5.4	1.0	36.0	29.3	82.1
WD2	663	207.8	90.5			8193.1	43.5
TMP2	717	58.7	13.6	27.0	83.0	183.6	23.1
BARP	689	784.4	5.0	768.0	794.0	25.4	0.6
RAIN	717	0.1	0.8	0.0	14.0	0.6	999.4

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=78 MONTH=12							
RH1	718	73.0	15.5	31.0	99.0	240.0	21.2
WS2	713	8.3	6.2	1.0	40.0	38.4	74.9
WD2	690	206.9	80.0			6403.0	38.7
TMP2	731	20.9	11.8	-10.0	41.0	138.5	56.4
BARP	732	781.1	6.5	766.0	794.0	42.5	0.8
RAIN	404	0.1	0.5	0.0	7.0	0.2	550.0
YEAR=79 MONTH=1							
RH1	738	74.4	17.1	35.0	100.0	292.4	23.0
WS2	737	5.6	4.2	1.0	22.0	17.6	74.3
WD2	730	196.1	83.9			7041.2	42.8
TMP2	742	17.5	11.3	-14.0	37.0	128.7	64.8
BARP	742	781.2	4.9	770.2	792.0	24.2	0.6
RAIN	527	0.2	0.9	0.0	17.0	0.8	446.0
YEAR=79 MONTH=10							
RH1	744	55.4	25.8	11.0	100.0	663.5	46.5
WS2	739	5.8	4.1	1.0	23.5	16.7	70.4
WD2	739	214.9	88.5			7829.3	41.2
TMP2	741	48.6	15.0	7.4	82.1	225.1	30.9
BARP	741	786.0	4.6	772.5	793.5	21.2	0.6
RAIN	733	0.2	1.4	0.0	17.0	2.0	567.5
YEAR=79 MONTH=11							
RH1	695	72.6	22.0	21.0	100.0	484.1	30.3
WS2	418	4.1	2.3	1.0	13.9	5.2	54.9
WD2	418	191.0	81.4			6629.6	42.6
TMP2	428	32.6	9.5	7.0	55.1	91.0	29.3
BARP	690	785.6	5.1	773.0	796.3	26.0	0.6
RAIN	703	0.3	2.4	0.0	42.0	5.7	801.8
YEAR=79 MONTH=12							
RH1	309	68.0	19.1	33.0	100.0	365.9	28.2
WS2	708	4.5	2.9	1.0	22.0	8.2	63.8
WD2	708	173.2	93.2			8687.9	53.8
TMP2	737	27.9	9.6	1.3	48.8	92.4	34.4
BARP	744	787.4	4.5	773.3	797.1	20.6	0.6
RAIN	685	0.1	0.4	0.0	7.0	0.2	653.4
YEAR=79 MONTH=2							
RH1	662	69.4	18.3	29.0	99.0	334.9	26.4
WS2	669	6.4	4.7	1.0	31.0	21.8	72.6
WD2	659	181.1	76.5			5854.3	42.3
TMP2	672	27.8	8.9	2.0	51.0	80.0	32.2
BARP	672	782.7	4.6	770.5	793.4	21.3	0.6
RAIN	623	0.1	0.6	0.0	8.0	0.3	560.9
YEAR=79 MONTH=3							
RH1	738	73.2	18.4	30.0	100.0	337.7	25.1
WS2	733	5.5	3.9	1.0	23.7	15.6	72.0
WD2	733	199.3	92.1			8478.4	46.2
TMP2	743	31.9	7.2	10.4	48.4	51.3	22.4
BARP	744	782.7	5.4	725.8	792.5	29.3	0.7
RAIN	703	0.2	0.9	0.0	12.0	0.8	427.0
YEAR=79 MONTH=4							
RH1	594	62.0	23.0	24.0	100.0	528.4	37.1
WS2	708	7.0	4.5	1.1	22.2	20.5	64.7
WD2	708	211.1	75.6			5713.3	35.8
TMP2	718	41.7	11.8	14.1	63.8	140.4	28.4
BARP	718	781.9	4.5	765.5	789.0	20.5	0.6
RAIN	695	0.2	0.8	0.0	10.0	0.6	458.4

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M ($^{\circ}$F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=79	MONTH=5			
RH1	466	64.0	26.1	21.0	100.0	682.0	40.8
WS2	725	5.9	3.8	1.0	22.0	14.2	63.8
WD2	724	213.6	94.6			8951.1	44.3
TMP2	743	49.0	12.2	26.0	71.3	148.7	24.9
BARP	744	783.5	4.7	771.0	790.7	21.9	0.6
RAIN	691	0.5	2.5	0.0	34.0	6.5	527.2
			YEAR=79	MONTH=6			
RH1	657	44.4	18.5	16.0	100.0	340.8	41.6
WS2	718	7.4	4.7	1.1	25.1	22.4	64.0
WD2	718	201.8	81.2			6591.5	40.2
TMP2	719	61.9	11.8	32.6	85.8	140.1	19.1
BARP	719	786.9	4.0	776.4	795.0	16.4	0.5
RAIN	720	0.1	0.6	0.0	6.0	0.3	1043.3
			YEAR=79	MONTH=7			
RH1	744	49.0	21.6	15.0	100.0	465.0	44.0
WS2	717	6.2	3.7	1.2	20.3	13.9	60.1
WD2	717	185.8	81.9			6711.1	44.1
TMP2	718	68.7	9.7	48.4	87.9	94.4	14.1
BARP	727	788.2	2.0	783.9	793.9	3.9	0.3
RAIN	729	0.1	1.6	0.0	41.0	2.6	1391.8
			YEAR=79	MONTH=8			
RH1	743	55.0	24.9	15.0	100.0	622.1	45.3
WS2	742	5.5	3.4	1.1	19.4	11.5	61.1
WD2	742	189.6	84.8			7194.3	44.7
TMP2	744	65.6	12.0	46.8	95.2	143.0	18.2
BARP	744	787.9	2.1	783.1	793.3	4.3	0.3
RAIN	690	0.1	0.9	0.0	18.0	0.8	731.9
			YEAR=79	MONTH=9			
RH1	718	40.7	17.7	15.0	100.0	312.2	43.4
WS2	711	5.6	3.3	1.0	20.3	10.9	58.7
WD2	711	203.0	90.1			8115.4	44.4
TMP2	718	63.1	11.9	33.6	88.6	142.0	18.9
BARP	718	788.8	1.9	784.0	792.9	3.6	0.2
RAIN	664	0.0	0.5	0.0	10.0	0.2	1077.3
			YEAR=80	MONTH=1			
RH1	253	73.7	19.5	27.0	96.0	379.5	26.4
WS2	732	7.1	6.1	1.0	28.6	37.2	86.0
WD2	732	215.7	74.9			5609.2	34.7
TMP2	743	24.8	9.0	3.0	42.9	81.1	36.3
BARP	743	782.1	5.6	766.4	792.1	31.8	0.7
RAIN	531	0.2	1.1	0.0	13.0	1.3	534.8
			YEAR=80	MONTH=10			
RH1	743	51.9	25.3	7.0	94.0	641.3	48.8
WS2	743	4.8	3.6	0.0	20.0	12.6	74.2
WD2	743	218.4	88.1			7765.4	40.4
TMP2	742	45.4	13.1	17.0	74.0	171.6	28.9
BARP	741	787.8	5.3	773.0	795.0	28.3	0.7
RAIN	732	0.2	1.2	0.0	18.0	1.5	775.9
			YEAR=80	MONTH=11			
RH1	718	57.8	23.4	13.0	98.0	545.5	40.4
WS2	703	5.0	3.8	0.0	19.0	14.1	75.7
WD2	684	193.7	78.7			6192.8	40.6
TMP2	718	47.8	8.4	23.0	65.0	71.0	17.6
BARP	718	786.2	4.0	775.0	795.0	15.7	0.5
RAIN	674	0.1	0.9	0.0	13.0	0.8	875.5

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=80	MONTH=2						
RH1	674	67.1	20.1	18.0	95.0	405.4	30.0
WS2	681	5.5	3.5	1.0	21.2	12.0	63.0
WD2	682	198.9	78.2			6117.5	39.3
TMP2	694	30.3	8.8	1.2	49.3	76.9	29.0
BARP	694	784.2	5.6	770.9	793.3	31.5	0.7
RAIN	618	0.2	1.1	0.0	18.0	1.3	503.6
YEAR=80	MONTH=3						
RH1	572	65.8	19.8	22.0	99.0	392.5	30.1
WS2	733	6.4	4.1	0.0	23.0	16.6	63.4
WD2	733	192.9	100.5			10106.7	52.1
TMP2	735	29.9	7.3	8.1	48.0	52.8	24.3
BARP	735	780.4	4.1	772.7	790.0	16.7	0.5
RAIN	667	0.3	1.3	0.0	12.0	1.7	383.7
YEAR=80	MONTH=4						
RH1	690	53.2	23.1	13.0	98.0	533.7	43.4
WS2	719	5.5	3.5	0.0	17.0	12.0	62.9
WD2	719	195.4	98.8			9763.9	50.6
TMP2	719	41.1	12.0	16.0	68.0	144.6	29.3
BARP	719	784.6	4.3	774.0	793.0	18.2	0.5
RAIN	715	0.1	1.0	0.0	13.0	1.1	836.7
YEAR=80	MONTH=5						
RH1	734	60.6	24.7	11.0	98.0	611.0	40.8
WS2	684	6.5	5.0	0.0	26.0	24.7	76.6
WD2	684	203.2	75.1			5646.4	37.0
TMP2	684	48.5	9.2	31.0	74.0	85.4	19.1
BARP	684	782.5	3.9	773.0	789.0	14.9	0.5
RAIN	573	0.2	0.8	0.0	7.0	0.6	498.7
YEAR=80	MONTH=6						
RH1	659	31.2	15.9	11.0	90.0	253.2	50.9
WS2	714	7.7	5.0	0.0	23.0	25.1	65.1
WD2	713	211.9	66.6			4432.1	31.4
TMP2	714	65.5	10.0	38.0	88.0	99.3	15.2
BARP	714	786.5	2.9	779.0	792.0	8.6	0.4
RAIN	706	0.0	0.1	0.0	2.0	0.0	1249.4
YEAR=80	MONTH=7						
RH1	742	42.4	24.2	8.0	93.0	587.9	57.2
WS2	647	5.4	3.6	0.0	16.0	12.8	66.3
WD2	647	199.0	82.7			6839.2	41.6
TMP2	647	69.4	9.0	51.0	88.0	81.5	13.0
BARP	647	789.2	1.8	784.0	793.0	3.1	0.2
RAIN	649	0.1	0.8	0.0	16.0	0.7	847.2
YEAR=80	MONTH=8						
RH1	606	38.4	21.7	8.0	94.0	470.6	56.6
WS2	738	6.8	4.5	0.0	19.0	20.0	66.1
WD2	738	212.5	73.3			5373.1	34.5
TMP2	738	66.0	9.6	40.0	86.0	92.7	14.6
BARP	738	786.5	2.3	780.0	792.0	5.5	0.3
RAIN	734	0.1	0.7	0.0	11.0	0.5	804.8
YEAR=80	MONTH=9						
RH1	720	42.3	23.7	8.0	93.0	562.7	56.1
WS2	720	5.8	4.5	0.0	22.0	19.8	76.8
WD2	720	214.9	81.2			6596.8	37.8
TMP2	720	59.7	9.2	34.0	81.0	84.6	15.4
BARP	720	787.8	2.4	781.0	793.0	5.7	0.3
RAIN	718	0.1	0.8	0.0	15.0	0.6	1501.2

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=80 MONTH=12							
RH1	588	58.0	22.8	17.0	96.0	518.9	39.2
WS2	736	4.9	4.6	0.0	24.0	20.8	93.0
WD2	743	202.0	71.4			5096.3	35.3
TMP2	743	36.0	8.5	13.0	55.0	71.7	23.5
BARP	743	787.5	4.8	775.0	796.0	23.2	0.6
RAIN	708	0.1	0.4	0.0	6.0	0.2	848.7
YEAR=81 MONTH=1							
RH1	739	65.6	21.3	21.0	99.0	455.1	32.5
WS2	694	3.8	3.1	1.0	20.0	9.6	81.2
WD2	688	213.9	75.0			5620.4	35.0
TMP2	739	30.8	7.3	13.0	51.0	54.0	23.9
BARP	744	786.5	3.8	778.0	794.0	14.1	0.5
RAIN	737	0.1	0.6	0.0	10.0	0.4	661.3
YEAR=81 MONTH=10							
RH1	668	44.2	14.6	21.0	65.0	212.2	32.9
WS2	711	5.7	4.6	1.0	25.0	21.0	80.1
WD2	711	201.4	73.4			5390.2	36.5
TMP2	728	43.2	9.4	18.0	73.0	87.6	21.7
BARP	727	782.2	5.2	748.0	794.0	27.5	0.7
RAIN	712	0.4	2.2	0.0	25.0	4.8	510.4
YEAR=81 MONTH=11							
RH1	720	43.3	13.8	21.0	68.0	191.3	31.9
WS2	708	5.1	4.3	1.0	23.0	18.4	83.4
WD2	708	206.5	72.2			5212.0	35.0
TMP2	719	37.4	10.6	9.0	58.0	113.0	28.4
BARP	719	784.4	5.1	771.0	799.0	26.4	0.7
RAIN	480	0.1	0.5	0.0	8.0	0.2	951.7
YEAR=81 MONTH=12							
RH1	684	42.2	10.6	22.0	64.0	111.9	25.1
WS2	736	6.0	4.4	1.0	24.0	19.6	73.6
WD2	736	189.5	72.5			5256.0	38.2
TMP2	744	29.8	10.8	4.0	55.0	116.6	36.2
BARP	744	782.1	4.7	768.0	791.0	22.3	0.6
RAIN	735	0.2	0.9	0.0	10.0	0.8	545.5
YEAR=81 MONTH=2							
RH1	669	59.7	21.3	17.0	100.0	452.8	35.6
WS2	662	5.2	3.9	1.0	19.0	15.0	74.9
WD2	662	197.7	76.0			5769.9	38.4
TMP2	667	30.3	10.7	-3.0	53.0	114.9	35.4
BARP	667	786.9	4.7	770.0	797.0	22.3	0.6
RAIN	670	0.1	0.4	0.0	5.0	0.1	762.9
YEAR=81 MONTH=3							
RH1	389	69.2	15.8	37.0	99.0	248.4	22.8
WS2	732	5.0	3.7	1.0	23.0	13.6	73.4
WD2	732	202.4	81.4			6630.5	40.2
TMP2	740	33.0	6.6	17.0	55.0	43.5	20.0
BARP	744	787.7	5.6	770.0	796.0	31.6	0.7
RAIN	567	0.2	0.9	0.0	10.0	0.8	397.7
YEAR=81 MONTH=4							
RH1	675	55.8	13.1	40.0	86.0	171.2	23.6
WS2	713	6.8	4.5	1.0	19.0	19.9	65.7
WD2	713	205.5	79.4			6307.9	38.6
TMP2	720	47.9	11.1	16.0	70.0	123.9	23.2
BARP	720	788.8	4.3	775.0	801.0	18.3	0.5
RAIN	719	0.1	0.7	0.0	10.0	0.5	872.9

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=81 MONTH=5							
RH1	635	64.3	13.3	42.0	86.0	178.0	20.7
WS2	665	5.8	4.3	1.0	22.0	18.8	75.1
WD2	665	201.5	85.8			7358.9	42.6
TMP2	722	48.7	10.3	28.0	76.0	106.6	21.2
BARP	500	785.0	4.6	774.0	795.0	21.2	0.6
RAIN	695	0.4	1.9	0.0	25.0	3.6	537.6
YEAR=81 MONTH=6							
RH1	653	55.3	12.5	41.0	85.0	155.0	22.5
WS2	605	6.6	4.6	1.0	22.0	21.1	69.5
WD2	605	216.2	86.3			7447.5	39.9
TMP2	610	65.7	13.5	30.0	91.0	181.5	20.5
BARP	480	787.4	3.9	779.0	798.0	15.0	0.5
RAIN	720	0.2	2.0	0.0	37.0	3.9	1063.8
YEAR=81 MONTH=7							
RH1	712	57.7	14.0	42.0	87.0	195.7	24.2
WS2	671	5.3	3.5	1.0	17.0	12.2	66.1
WD2	671	193.5	82.3			6778.1	42.5
TMP2	684	67.6	10.9	43.0	92.0	119.3	16.1
BARP	648	788.0	1.8	784.0	793.0	3.2	0.2
RAIN	744	0.2	1.1	0.0	13.0	1.2	634.8
YEAR=81 MONTH=8							
RH1	573	39.6	12.0	21.0	67.0	143.0	30.2
WS2	666	4.8	3.3	1.0	23.0	11.1	68.7
WD2	666	195.8	88.1			7763.2	45.0
TMP2	681	65.0	9.9	47.0	87.0	98.7	15.3
BARP	681	790.0	2.4	784.0	795.0	5.6	0.3
RAIN	710	0.1	1.4	0.0	34.0	2.0	1421.1
YEAR=81 MONTH=9							
RH1	720	37.7	13.0	21.0	67.0	168.8	34.4
WS2	668	5.5	4.0	1.0	21.0	15.9	72.4
WD2	668	193.0	79.7			6358.6	41.3
TMP2	677	59.8	9.1	34.0	80.0	82.5	15.2
BARP	677	788.4	3.5	782.0	798.0	12.3	0.4
RAIN	720	0.2	1.7	0.0	30.0	2.8	1024.8
YEAR=82 MONTH=1							
RH1	581	54.6	29.0	1.0	100.0	840.1	53.1
WS2	642	6.0	4.0	1.0	20.0	16.4	67.6
WD2	642	218.1	93.7			8782.6	43.0
TMP2	654	49.1	11.0	24.0	76.0	121.3	22.4
BARP	727	780.4	5.7	767.0	794.0	32.3	0.7
RAIN	648	0.1	0.9	0.0	12.0	0.9	679.0
YEAR=82 MONTH=2							
RH1	615	44.5	12.2	23.0	65.0	149.4	27.4
WS2	640	4.8	3.3	1.0	19.0	11.2	70.0
WD2	640	206.7	72.4			5241.5	35.0
TMP2	653	25.7	14.7	-16.0	54.0	216.7	57.3
BARP	526	782.6	4.1	773.0	791.0	16.6	0.5
RAIN	589	0.1	0.7	0.0	I1.0	0.5	627.0
YEAR=82 MONTH=3							
RH1	585	42.9	17.7	7.0	100.0	311.8	41.1
WS2	639	7.2	4.9	1.0	24.0	23.7	68.0
WD2	639	215.6	63.0			3972.1	29.2
TMP2	647	34.0	8.0	15.0	52.0	63.8	23.5
BARP	0	.	.	.	.	.	.
RAIN	697	0.1	0.5	0.0	5.0	0.2	580.7

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=82 MONTH=4							
RH1	625	43.3	28.0	8.0	100.0	781.9	64.6
WS2	638	7.0	4.7	1.0	23.0	22.4	67.5
WD2	638	204.0	89.7			8044.4	44.0
TMP2	646	40.0	12.2	11.0	67.0	148.5	30.5
BARP	0	.	.	.	.	.	.
RAIN	720	0.1	0.8	0.0	11.0	0.6	687.3
YEAR=82 MONTH=5							
RH1	581	54.6	29.0	1.0	100.0	840.1	53.1
WS2	642	6.0	4.0	1.0	20.0	16.4	67.6
WD2	642	218.1	93.7			8782.6	43.0
TMP2	654	49.1	11.0	24.0	76.0	121.3	22.4
BARP	294	778.3	3.1	772.0	785.0	9.7	0.4
RAIN	574	0.3	1.8	0.0	25.0	3.2	558.8

---

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

CLIMATOLOGICAL
RECORDS

2.3.3.1 Climatological Records

This section presents low altitude climatological data for temperature, relative humidity, and direct solar radiation. The Colorado climatological data for temperature are also presented here. No new data for snowfall and snow depth are available at report time.

Table/Figure No.	Description	Page No.
Table 2.3.3.1-1	Temperature and Relative Humidity, Station AA23	II-49
Table 2.2.3.1-2	Temperature at Station AD20	II-50
Table 2.2.3.1-3	Direct Solar Radiation at Station AB23	II-51

Colorado Climatological Data

Table 2.3.3.1-4	Minimum Temperature, Station WR01	II-53
Table 2.3.3.1-5	Maximum Temperature, Station WR01	II-54
Table 2.3.3.1-6	Minimum Temperature, Station WR02	II-55
Table 2.3.3.1-7	Maximum Temperature, Station WR02	II-56

Figure 2.3.3.1-1 shows monitoring stations presented in this section.

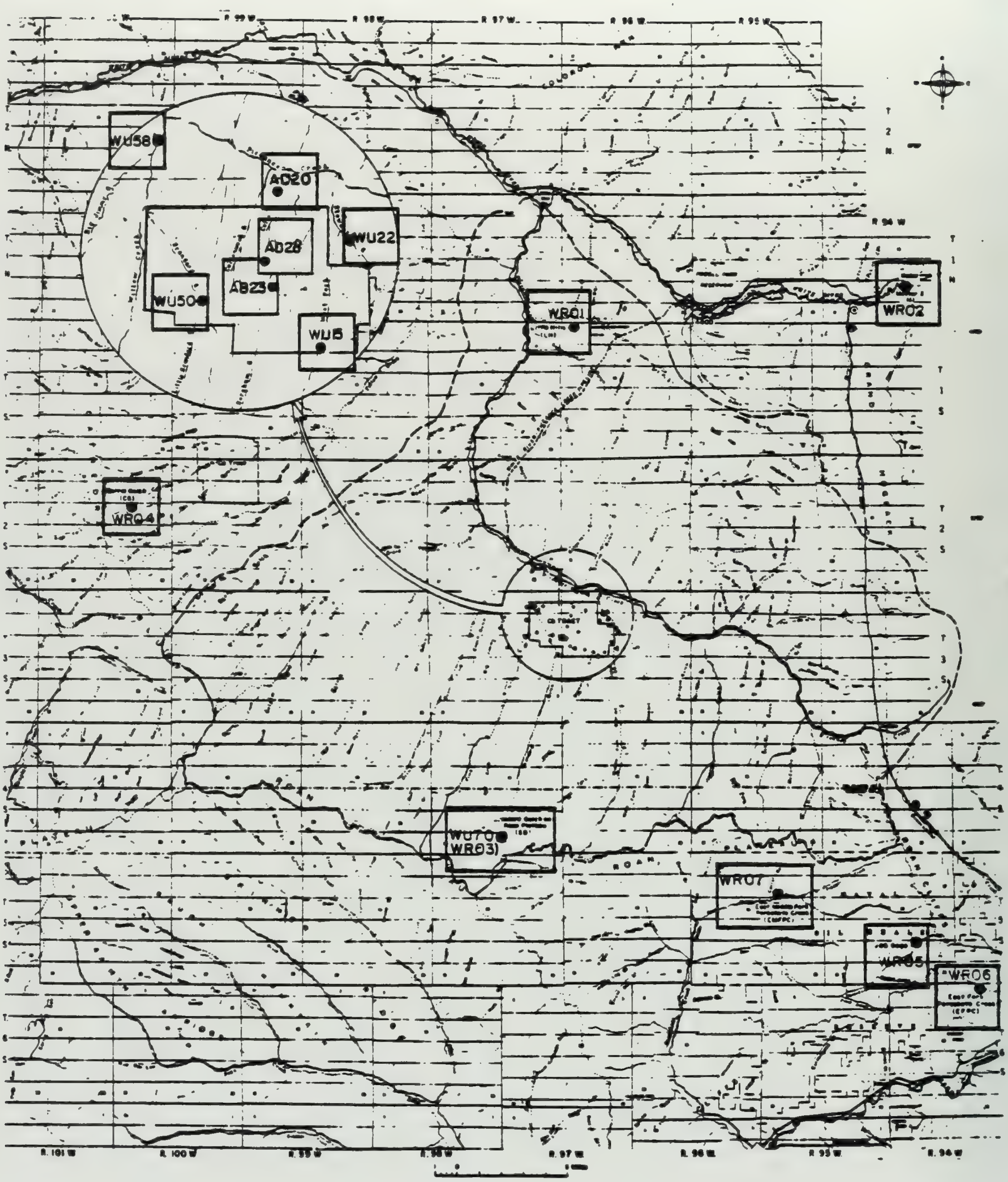

R 99 W
R 98 W
R 97 W
R 96 W
R 95 W
R 94 W
WU58
AD20
AD28
WU22
AB23
WU50
WU5
WR01
WR02
WR04
WU70
(WR03)
WR07
WR05
WR06
R. 101 W
R. 100 W
R. 99 W
R. 98 W
R. 97 W
R. 96 W
R. 95 W
R. 94 W

FIGURE 2.3.3.1-1

CLIMATOLOGICAL MONITORING NETWORK

TABLE 2.3.3.1-1

METEOROLOGICAL SUMMARY: TEMPERATURE AND RELATIVE HUMIDITY

10 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Temperature, Hourly Maximum (°C)	13	10	12	11	19	24	31	33	32	30	20	12
Temperature, Hourly Minimum (°C)	-16	-19	-24	-9	-12	-4	-1	2	9	-24	-8	-13
Temperature, Hourly Average (°C)	-1	-4	-4	1	5	10	15	20	19	13	5	0
Relative Humidity, Hourly Maximum (%)	64	(IM)	65	100	100	100	97	97	95	100	100	100
Relative Humidity, Hourly Minimum (%)	22	(IM)	23	7	8	1	5	7	8	0	13	18
Relative Humidity, Hourly Average (%)	42	(IM)	45	(1)	43	54	37	35	52	53	57	69

(IM) Instrument Malfunction.
(1) <75% data.

METEOROLOGICAL SUMMARY: TEMPERATURE AND RELATIVE HUMIDITY

10 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Temperature, Hourly Maximum (°C)	9											
Temperature, Hourly Minimum (°C)	-21											
Temperature, Hourly Average (°C)	-4											
Relative Humidity, Hourly Maximum (%)	100											
Relative Humidity, Hourly Minimum (%)	0											
Relative Humidity, Hourly Average (%)	52											

TABLE 2.3.3.1-2

METEOROLOGICAL SUMMARY: TEMPERATURE AT STATION AD20

10 METER LEVEL

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July**	Aug.	Sept.	Oct.	Nov.
Temperature, Hourly Maximum (°C)			14	12	19	24	31	32				
Temperature, Hourly Minimum (°C)			-36	-12	-18	-8	-3	1				
Temperature, Hourly Average (°C)			-7	1	3	9	14	19				

* Station initiated February 3, 1982, replacing air quality trailer AB20. Refer to Environmental Monitoring Report, July 15, 1982, Station AB20 summary tables for December 1981 through January 1982 values.

** Station discontinued 7/26/82.

TABLE 2.3.3.1-3

Station AB23
Direct Solar Radiation

Month/ Year	Total Langleys For Month	Average Day-light Hr/Day	Daylight Hours/ Month	Uptime Day-light Hr/Mo.*	Daily Total/Day of The Month: Monthly Highest	Daily Total/Day of The Month: Monthly Lowest
12/81	6245	10	310	310	482/3	14/21
01/82	5743	10	310	300	320/28	70/22
02/82	7556	11	308	297	385/26	116/16
03/82	8961	11	372	308	510/24	130/26
04/82	12017	12	390	334	635/21	215/7
05/82	11827	14	434	337	673/31	183/4
06/82	14998	15	450	422	695/7	272/22
07/82	16688	15	465	446	703/10	252/28
08/82	13313	14	434	417	702/1	235/13
09/82	9931	13	390	388	562/1	103/11
10/82	9485	12	372	372	453/6	95/27
11/82	6506	10	300	296	320/3	100/22 & 29

* Channel "uptime" is given for reference only.

TABLE 2.3.3.1-3 (Contd)

Station AB23
Direct Solar Radiation

Month/ Year	Total Langleys For Month	Average Daylight Hr/Day	Daylight Hours/ Month	Uptime Daylight Hr/Mo.*	Daily Total/Day of The Month	
					Monthly Highest	Monthly Lowest
12/82	1503	10	310	81	259/4	100/9

* Channel "uptime" is given for reference only.

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.1-4

STATION: WR01

Minimum Temperature (DEGF)

YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	11	9	18	32		38			40	25		
2	-13	2	27	18		33			32	22		
3	-10	5	24	16		42			33	22		
4	0	-22	8	29		31			39	24		
5	14	-34	14	7		33			36	26		
6	11	-33	8			26			40	22		
7	-31	-30	17	20		22			41	19		
8	-30	-19	19	2		28			43	22		
9	-21	-19	17	10		25			40	26		
10	-9	-12	19	9		26			46	17		
11	-4	-1	25	24		33			45	13		
12	0	-7	27	34		35			38	18		
13	-4	-4	12	22		35			36	24		
14	-4	26	16	21		34			31	18		
15	-2	20	25	19		37			34	19		
16	3	19	22	11		34			33	24		
17	18	17	16	5		40			41	22		
18	12	14	19	14		48			32	22		
19	5	10	18	9		32			38	11		
20	4	10	11	3		35			35	11		
21	6	15	8	1		41			34	14		
22	6	19	6	8		43			36	16		
23	-5	26	8	21		44			41	18		
24	0	12	10	21		39			32	25		
25	6	15	11	22		41			34	37		
26	8	12	24	25		35			49	29		
27	19	17	30	29		39			44	13		
28	5	19	23	19		41			30	18		
29	6		30	29		36			31	14		
30	-1		12	16		45			33	25		
31	2		12							32		
AVG.	.1	3.1	17.3	17.1		35.7			37.2	20.9		

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.1-5

STATION: WR01 Maximum Temperature (DEGF) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	39	36	50	50		68			93			
2	44	24	49	53		72			83			
3	21	28	47	37		70			84			
4	19	22	35	51		69			88			
5	24	-1	34	52		77			84			
6	32	11	33			75						
7	14	18	36	48		67			DATA NOT AVAILABLE FOR REMAINDER OF MONTH			
8	12	30	42	30		75						
9	16	23	48	37		70						
10	23	28	50	41		70						
11	31	30	54	55		75						
12	32	29	49	59		78						
13	24	39	43	48		80						
14	26	44	50	60		79						
15	34	42	49	60		74						
16	33	45	45	56		70				DATA NOT AVAILABLE		
17	36	42	44	45		79						
18	43	44	42	58		79						
19	36	38	54	56		73						
20	37	46	36	34		78						
21	28	49	35	35		80						
22	33	55	36	49		76						
23	19	54	41	60		78						
24	29	50	44	53		81						
25	45	41	47	62		82						
26	46	44	53	61		78						
27	52	46	44	56		78						
28	37	46	47	55		87						
29	41		53	64		90						
30	34		36	53		87						
31	34		34									
AVG.	31.4	35.8	43.9	51.0		76.5						

CLIMATOLOGICAL DATA SUMMARY TABLE 2.3.3.1-6

STATION: WR02 Minimum Temperature (DEGF) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19	16	25	31		41			47	32		
2	1	4	35	21		33			43	27		
3	7	9	29	21		40			44	28		
4	8	-8	16	27		36			40	31		
5	21	-19	16	5		32			50	35		
6	9	-23	14	21		27			44	29		
7	-22	-12	26	24		27			48	23		
8	-14	2	22	7		37			48	27		
9	-3	-11	24	15		30			44	23		
10	3	11	33	16		35			48	19		
11	6	8	35	36		39			46	17		
12	9	1	27	36		45			41	26		
13	6	5	20	30		44			40	32		
14	4	20	25	29		44			37	29		
15	9	25	31	30		40			37	25		
16	14	26	26	20		39			40	32		
17	29	28	28	16		45			45	29		
18	30	16	22	24		50			39	34		
19	21	15	24	15		38			41	17		
20	18	18	20	16		40			43	17		
21	6	23	14	12		42			41	22		
22	12	22	14	18		45			40	26		
23	3	31	16	27		45			48	27		
24	23	18	19	29		45			40	35		
25	15	25	17	32		45			47	45		
26	20	17	31	33		40			52	37		
27	24	24	33	38		46			45	31		
28	10	26	31	28		47			35	21		
29	21		26	38		47			35	22		
30	5		16	27		56			36	32		
31	13		15							38		
AVG.	10.5	11.3	23.5	24.1		40.7			42.8	28.0		

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.1-7

STATION: WR02

Maximum Temperature (DEGF)

YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	44	35	53	58		70			84	55		
2	41	28	51	52		65			85	60		
3	25	27	42	56		69			87	67		
4	25	30	43	55		70			81	70		
5	40	25	36	45		72			74	66		
6	36	22	39	52		66			78	56		
7	15	36	42	50		74			72	68		
8	26	33	50	42		72			70	58		
9	30	32	55	45		68			78	56		
10	40	35	55	54		76			74	58		
11	40	36	55	64		77			68	49		
12	39	38	47	59		80			62	56		
13	32	45	57	65		76			49	50		
14	35	45	56	65		77			50	63		
15	38	47	50	65		70			67	68		
16	44	46	48	50		71			74	65		
17	47	45	47	62		79			72	66		
18	42	46	57	60		72			73	65		
19	43	50	53	45		77			70	60		
20	40	51	38	41		80			71	58		
21	37	53	41	48		80			77	60		
22	30	57	44	65		75			78	61		
23	29	51	49	61		79			80	67		
24	46	47	50	65		81			77	72		
25	43	50	57	64		80			63	61		
26	57	51	54	60		76			71	57		
27	48	49	50	56		85			69	49		
28	47	55	56	60		90			51	41		
29	36		54	69		87			55	43		
30	35		37	69		85			60	52		
31	38		49							49		
AVG.	37.7	41.6	48.9	56.7		76.0			70.7	58.9		

PRECIPITATION DATA

2.3.3.2 Precipitation

Precipitation was monitored at three stations during this reporting period. Stations AB23 and AD28 (leachate pile) were monitored for the entire period. Station AD20 was discontinued on July 26, 1982.

USGS precipitation data are reported for Stations WR01 (Little Hills) and WR02 (Meeker 2). Data for Stations WR03 - WR08, WU15, WU22, WU50, and WU58 are not available at report time.

Following is a list of tables included in this section:

Table No.	Description	Page No.
	Summary of Precipitation	
2.3.3.2-1	Station AB23	II-58
2.3.3.2-2	Station AD20	II-59
2.3.3.2-3	Station AD28	II-60
2.3.3.2-4	Station WR01, Little Hills	II-61
2.3.3.2-5	Station WR02, Meeker 2	II-62

Figure 2.3.3.1-1 shows locations of monitoring stations presented in this section.

TABLE 2.3.3.2-1

SUMMARY OF PRECIPITATION: STATION AB23

(Measured with Weighing Rain Gauge)

(1981-1982)   By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.25	.30	.28	.13	.28	.63	.58	.76	.99	.84	.46	.23
Date	12/27/81	1/20/82	2/16/82	(1)	4/27/82	5/1/82	6/14/82	7/28/82	8/12/82	9/9/82	10/26/82	11/10/82
Time	0300	2400	1800		1000	1300	0500	1400	1500	1300	2300	2400
24-Hour Maximum (cm)	.74	.76	.46*	.33	.63	2.77	.58	1.42	1.93	1.35	.91	.79
Date	12/21/81	1/1/82	2/4/82	3/3/82	4/7/82	5/12/82	6/14/82	7/28/82	8/12/82	9/18/82	10/27/82	11/10/82
Total (cm)	3.00	2.24	1.74*	1.43*	2.06	4.66	1.45*	2.61*	6.38	7.47	1.81*	3.25

* Data missing for the month; this total may be incomplete.
(1) Maximum 1-Hour for March occurred 2 times: 3/15/82 @ 0400; 3/16/82 @ 2300.

1,18 .88 .69* .56* .81 1,83 .57* 1,03* 2,51 2,94

(1982-1983)   By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.25											
Date	12/9/82											
Time	2100											
24-Hour Maximum (cm)	.53											
Date	12/23/82											
Total (cm)	2.49											

0,88

TABLE 2.3.3.2-2

SUMMARY OF PRECIPITATION: STATION AD20*

(Measured with Weighing Rain Gauge)

(1981-1982)   By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July**	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)			(1)	.13	.25	.53	.18	.58				
Date				3/17/82	(3)	5/12/82	(4)	7/25/82				
Time				0100		1500		1400				
24-Hour Maximum(cm)			(1)	.30	.58	3.56	.38	.66				
Date				3/17/82	4/23/82	5/12/82	6/21/82	7/8/82				
Total (cm)			(1)	1.14(2)	1.32(2)	5.61	1.02	1.96				

* Station initiated February 3, 1982 replacing air quality trailer AB20. Refer to Environmental Monitoring Report, July 15, 1982, Station AB20 summary tables for December 1981 through January 1982 values.

(1) <75% data.

(2) Data missing for the month; this total may be incomplete.

(3) 1-hour maximum occurred 2 times: 4/2/82 @ 0500 and 4/23/82 @ 1100.

(4) 1-hour maximum occurred 2 times: 6/14/82 @ 2000 and 6/21/82 @ 1600.

** Station discontinued 7/26/82. Total precipitation value reported includes only data through 7/26/82.

TABLE 2.3.3.2-3

SUMMARY OF PRECIPITATION: STATION AD28

(Measured with Weighing Rain Gauge)

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.23	.15	.25	.25	.18	.51	.84	.51	.76	.63	.38	.23
Date	(1)	1/9/82	2/17/82	3/17/82	(2)	5/1/82	6/14/82	7/28/82	8/12/82	9/9/82	10/26/82	11/10/82
Time		1600	1000	1100		1400	1600	1400	1400	1100	2300	2400
24-Hour Maximum(cm)	.46	.25	.38	.41*	.56	2.06	.84	.86	1.93	1.70	.79	.99
Date	12/29/81	1/9/82	2/2/82	3/17/82	4/23/82	5/12/82	6/14/82	7/28/82	8/12/82	9/27/82	10/27/82	11/10/82
Total (cm)	2.18	.89	.93*	.57*	1.8*	5.15*	1.63	3.12	5.04	7.77	3.99	3.56

m→ m0,71 m2,03 0,64 1,22 1,98 3,06 1,57 1,40

M 0,81 M 1,60 [illegible]

* Data missing for the month; this total may be incomplete.
(1) Maximum 1-Hour for December occurred 2 times: 12/1/81 @ 1500; 12/29/81 @ 1600.
(2) Maximum 1-Hour for April occurred 2 times: 4/7/82 @ 1800; 4/23/82 @ 1000.

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.23											
Date	(1)											
Time												
24-Hour Maximum(cm)	.58											
Date	12/23/82											
Total (cm)	1.79(2)											

m0,70

(1) Maximum 1-Hour value occurred 2 times: 12/9/82 @ 2100, and 12/23/82 @ 2000.
(2) Total represents 86% of month. Instrument was not functioning for 14% of the total hours in month.

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.2-4

STATION: WR01 Precipitation (Inches) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	.08	.15								.09		
2	.16	.04	.05	.14								
3	.08		.09									
4		.03	.09									
5			.04	.03								
6									.42			
7				.11								
8				.04						.70		
9		.02							.05			
10									T			
11									.68			
12	.10		.02	.02					.44			
13	.06								.56	.15		
14									.32			
15			.02			.07			.04			
16			.06									
17		.24	.23									
18												
19			.02									
20	T											
21												
22	.13					.24						
23						.02			.02			
24				.04								
25										T		
26						.06			.11	.28		
27	.03		.16	.01					.32	.16		
28			.02	.04					.62			
29			T						.20			
30			.08						.03			
31										.26		
TOTAL	.76	.48	.88	.43		.39			3.81	1.64*		

*Partial Data

CLIMATOLOGICAL DATA SUMMARY

STATION: WR02

Precipitation (Inches)

YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	.07	.10								T		
2	.13		.02	.10								
3	.10	T	.02									
4			.10						.12			
5	.03			.05					.65	.20		
6	.04		T						.02	.08		
7				.07					T			
8		T							.04	.19		
9										.07		
10												
11									.58			
12	.14		.02	.20					.16			
13	.08								.42	.05		
14									.17			
15			.07						.09			
16		.19	T									
17			.20			T						
18												
19			T							T		
20	T								.02			
21												
22	.10								T			
23				.10					.12			
24				T								
25									T	T		
26						.03			.13	.02		
27	.10		.16	.10					.33	.60		
28									.20			
29			.02	T					.09			
30			T						.26			
31										.36		
TOTAL	.79	.29	.61	.62		.03			3.40	1.57		

WIND FIELDS

2.3.3.3 Wind Fields

This section presents the wind field data collected at the meteorological tower Station AA23 and Station AD20. Data consist of wind speed, wind direction, vertical variations in horizontal wind speed and wind direction, and stability class. Wind flow patterns and stability class provide information for diffusion modeling and pollutant transport and concentration.

Following is a list of tables and figures included in this section:

Meteorological Summary

Table/Figure No.	Description	Page No.
Table 2.3.3.3-1	Wind Speed and Direction at Station AA23 (10m)	II-65
Table 2.3.3.3-2	Wind Speed and Direction at Station AA23 (30m)	II-66
Table 2.3.3.3-3	Wind Speed and Direction at Station AA23 (60m)	II-67
Table 2.3.3.3-4	Wind Speed and Direction at Station AD20	II-68
Table 2.3.3.3-5	Vector Monthly Averages for Winds, Station AA23 (10m)	II-69
Table 2.3.3.3-6	Vector Monthly Averages for Winds, Station AA23 (30m)	II-70
Table 2.3.3.3-7	Vector Monthly Averages for Winds, Station AA23 (60m)	II-71

Direction-Only Wind Roses

Table/Figure No.	Description	Page No.
Figure 2.3.3.3-1	Station AA23 (10-meter level), 1982	II-72
Figure 2.3.3.3-2	Station AA23 (30-meter level), 1982	II-73
Figure 2.3.3.3-3	Station AA23 (60-meter level), 1982	II-74
Figure 2.3.3.3-4	Station AD20, 1982	II-75

Wind Rose Diagrams

Quarterly Wind Roses

Table/Figure No.	Description	Page No.
Figure 2.3.3.3-5	Station AA23 (10m), March - May, 1982	II-76
Figure 2.3.3.3-6	Station AA23 (30m), March - May, 1982	II-77
Figure 2.3.3.3-7	Station AA23 (60m), March - May, 1982	II-78
Figure 2.3.3.3-8	Station AD20 (10m), March - May, 1982	II-79
Figure 2.3.3.3-9	Station AA23 (10m), June - August, 1982	II-80
Figure 2.3.3.3-10	Station AA23 (30m), June - August, 1982	II-81
Figure 2.3.3.3-11	Station AA23 (60m), June - August, 1982	II-82
Figure 2.3.3.3-12	Station AA23 (10m), September - November, 1982	II-83
Figure 2.3.3.3-13	Station AA23 (30m), September - November, 1982	II-84
Figure 2.3.3.3-14	Station AA23 (60m), September - November, 1982	II-85

Table/Figure No. — Description — Page No.

Annual Wind Roses

Figure 2.3.3.3-15 Station AA23 (10m), December 1981 - November 1982 II-86
Figure 2.3.3.3-16 Station AA23 (30m), December 1981 - November 1982 II-87
Figure 2.3.3.3-17 Station AA23 (60m) December 1981 - November 1982 II-88

Atmospheric Stability*

Table 2.3.3.3-8 Pasquill-Gifford Average Hourly Atmospheric Stability Class. Ranges of dT/dz (variation of temperature with height) corresponding to each class are defined on the table. II-89
Table 2.3.3.3-9 Stability Class Frequency Distributions II-91

---

* Additional tables on atmospheric stability are presented in a following section (2.3.5).

TABLE 2.3.3.3-1

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

10 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) &	11	13	8	11	10	9	10	8	7	8	9	10
Associated Direction (DEG)	221	188*	211*	179	221	174*	209*	205*	196*	186*	199*	189
Wind Speed, Hourly Average(MPS) &	3	4	2	3	3	3	3	2	2	2	2	2
Wind Direction, Hourly Average(DEG)	194	214	212	222	232	264	245	216	176	191	222	186

* Maximum wind speed occurred >1 time. Associated Direction was calculated as a vector mean.

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

10 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) &	10											
Associated Direction (DEG)	216											
Wind Speed, Hourly Average(MPS) &	3											
Wind Direction, Hourly Average(DEG)	225											

TABLE 2.3.3.3-2

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

30 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) &	15	17	12	15	15	12	14	11	10	11	13	14
Associated Direction (DEG)	213.5*	179*	213	180	225	175*	220	203	177	167	200	193
Wind Speed, Hourly Average(MPS) &	4	5	3	4	4	4	4	2	3	3	3	3
Wind Direction, Hourly Average(DEG)	192	207	208	226	239	279	253	225	181	195	223	195

* Maximum wind speed occurred >1 time. Associated Direction was calculated as a vector mean.

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

30 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) &	14											
Associated Direction (DEG)	219											
Wind Speed, Hourly Average(MPS) &	3											
Wind Direction, Hourly Average(DEG)	227											

TABLE 2.3.3.3-3

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

60 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) &	17	18	13	17	17	13	15	12	12	12	14	17
Associated Direction (DEG)	223*	191*	222	181	225	180*	209*	193*	178*	174*	201*	194
Wind Speed, Hourly Average(MPS) &	4	6	3	5	5	4	4	4	3	4	4	4
Wind Direction, Hourly Average(DEG)	210	218	222	234	246	291	254	223	190	201	230	206

* Maximum wind speed occurred >1 time. Associated direction was calculated as a vector mean.

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

60 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) &	16											
Associated Direction (DEG)	218											
Wind Speed, Hourly Average(MPS) &	4											
Wind Direction, Hourly Average(DEG)	231											

TABLE 2.3.3.3-4

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

STATION AD20*

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July**	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS)			7	10	10	8	9	8				
&												
Associated Direction (DEG)			258	259.5(1)	282(1)	135.5(1)	275	108				
Wind Speed, Hourly Average(MPS)			3	3	3	3	3	3				
&												
Wind Direction, Hourly Average(DEG)			148	157	172	178	168	154				

* Station initiated February 3, 1982, replacing air quality trailer AB20. Refer to Environmental Monitoring Report, July 15, 1982, Station AB20 summary tables for December 1981 through January 1982 values.

(1) Maximum wind speed occurred >1 time. Associated direction was calculated as a vector mean.

** Station discontinued 7/26/82.

TABLE 2.3.3.3-5

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

10 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	1.8	2.8	1.2	2.3	1.5	1.0	1.2	1.2	0.8	1.4	0.9	1.5
Wind Direction (DEG)	208	212	216	211	232	249	226	210	181	185	218	187

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

10 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	1.2											
Wind Direction (DEG)	213											

TABLE 2.3.3.3-6

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

30 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	2.7	3.8	1.6	3.2	2.1	1.4	1.7	1.7	1.2	2.0	1.2	2.2
Wind Direction (DEG)	203	206	209	211	235	252	225	209	181	185	216	191

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

30 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	1.8											
Wind Direction (DEG)	211											

TABLE 2.3.3.3-7

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

60 METER LEVEL
STATION AA23

(1981-1982) By Month

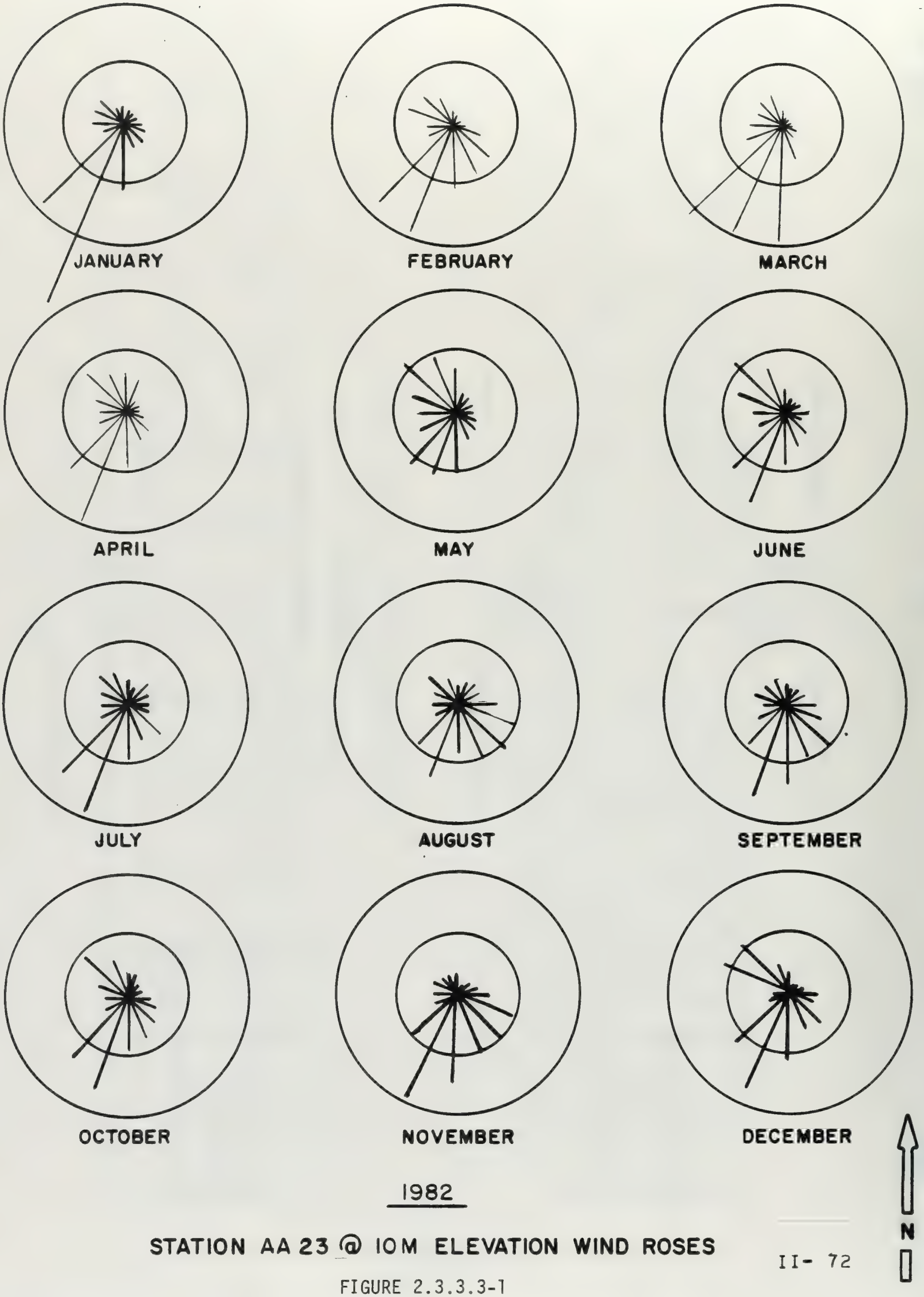
Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	3.3	4.5	2.0	3.8	2.5	1.5	1.9	2.0	1.6	2.4	1.4	2.9
Wind Direction (DEG)	217	218	221	215	235	257	227	211	188	189	220	197

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

60 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	2.3											
Wind Direction (DEG)	216											


JANUARY FEBRUARY MARCH

APRIL MAY JUNE

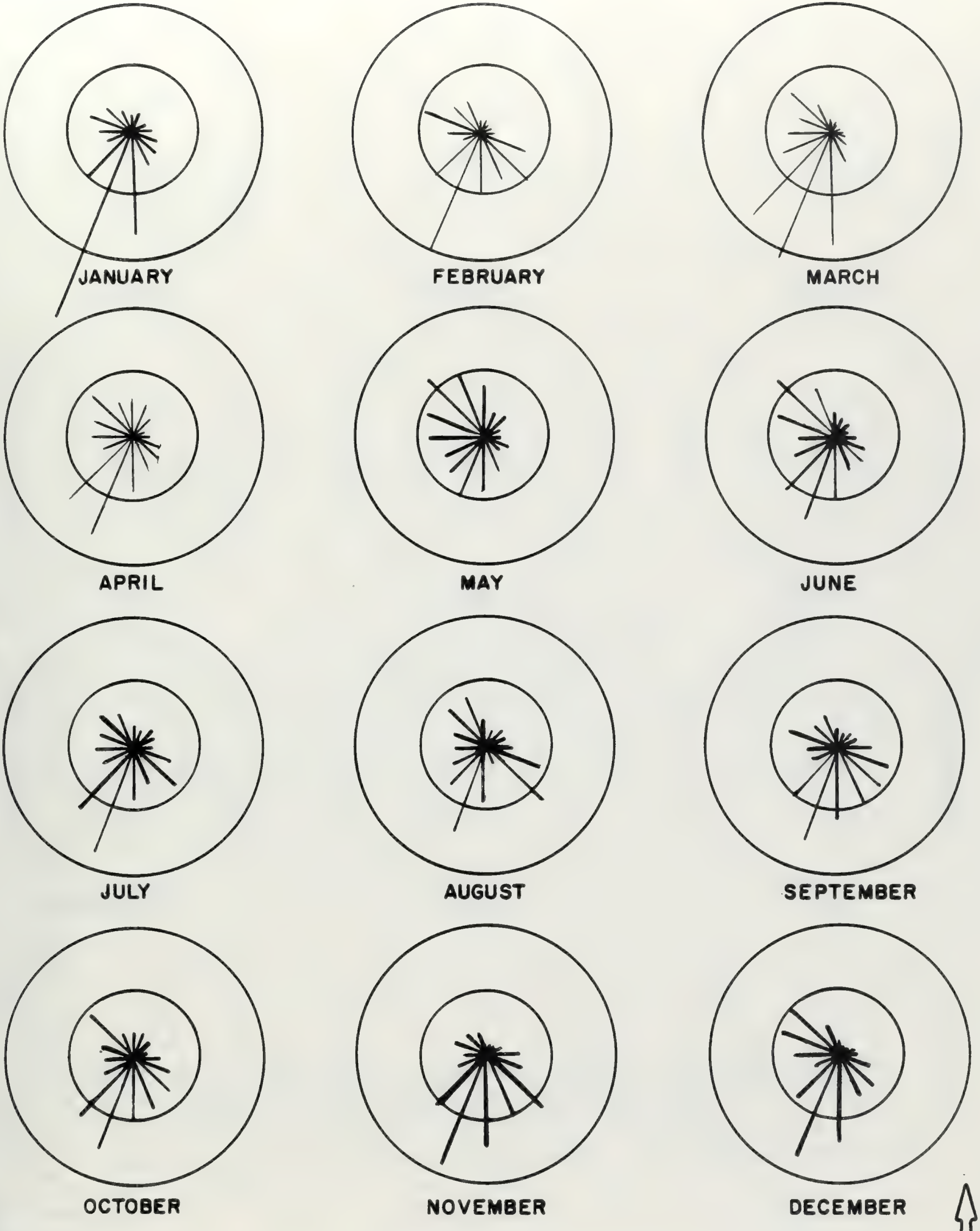
JULY AUGUST SEPTEMBER

OCTOBER NOVEMBER DECEMBER

1982

STATION AA 23 @ 10M ELEVATION WIND ROSES

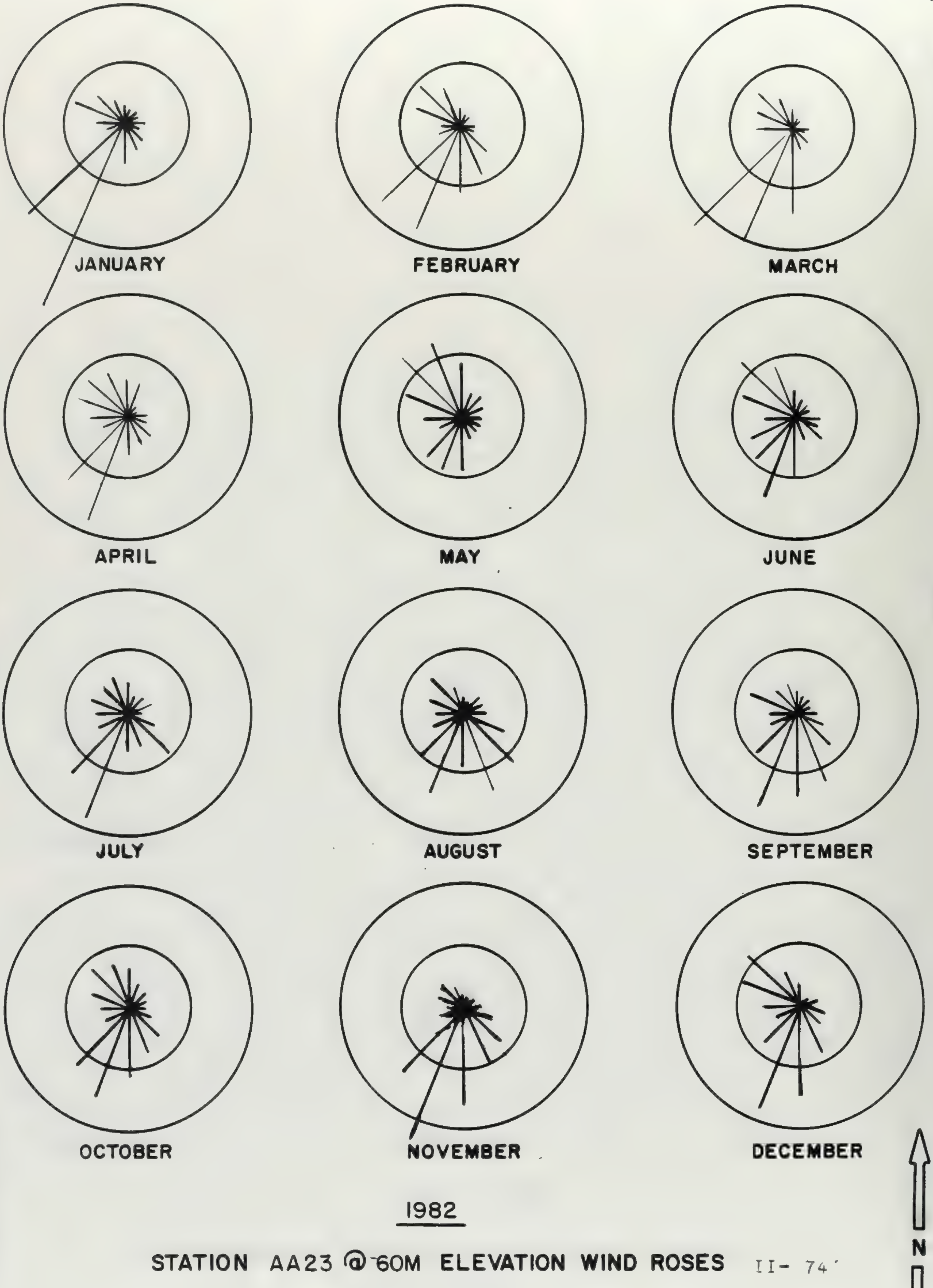
FIGURE 2.3.3.3-1



1982

STATION AA23 @ 30M ELEVATION WIND ROSES

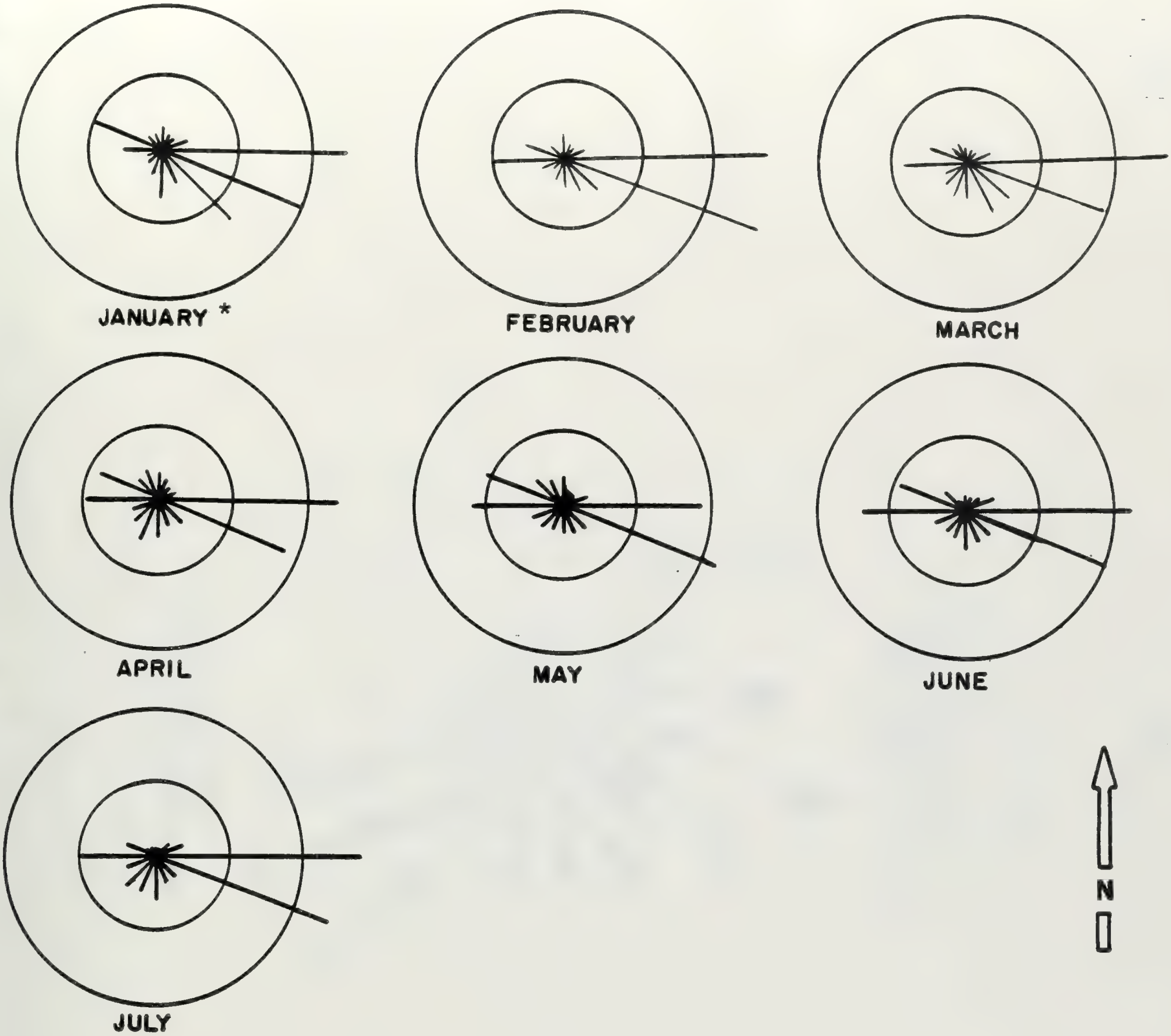
FIGURE 2.3.3.3-2



1982

STATION AA23 @ 60M ELEVATION WIND ROSES

FIGURE 2.3.3.3-3



JANUARY * FEBRUARY MARCH

APRIL MAY JUNE

JULY

Meteorological station AD20 was initiated in February 1982, replacing Air Quality trailer AB20 at the same site. Meteorological data were collected until 7/26/82, at which time the station was discontinued.

* Data for January is reported as station AB20. It is included here for easy reference.

1982

STATION AB20 @ 10M ELEVATION WIND ROSES

FIGURE 2.3.3.3-4

FIGURE 2.3.3.3-5

AB23 QUARTERLY WIND ROSE @ 10M
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1919

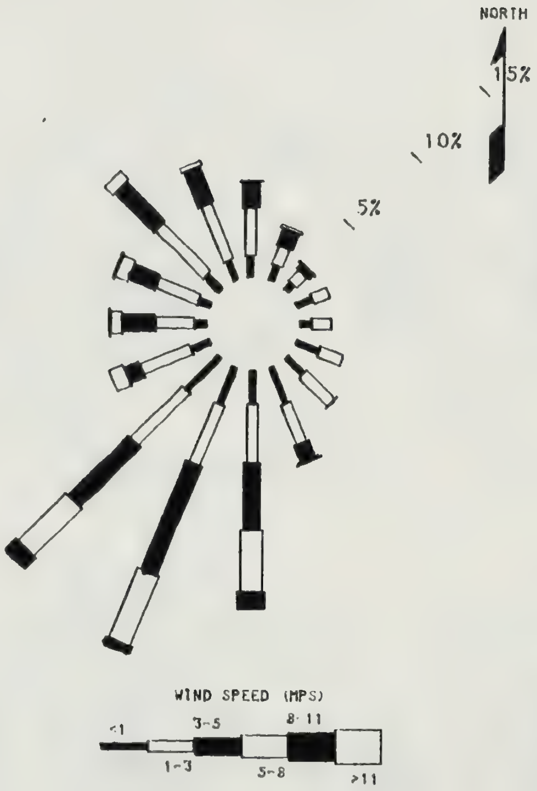


FIGURE 2.3.3.3-6

AB23 • 30M QUARTERLY WIND ROSE
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1932

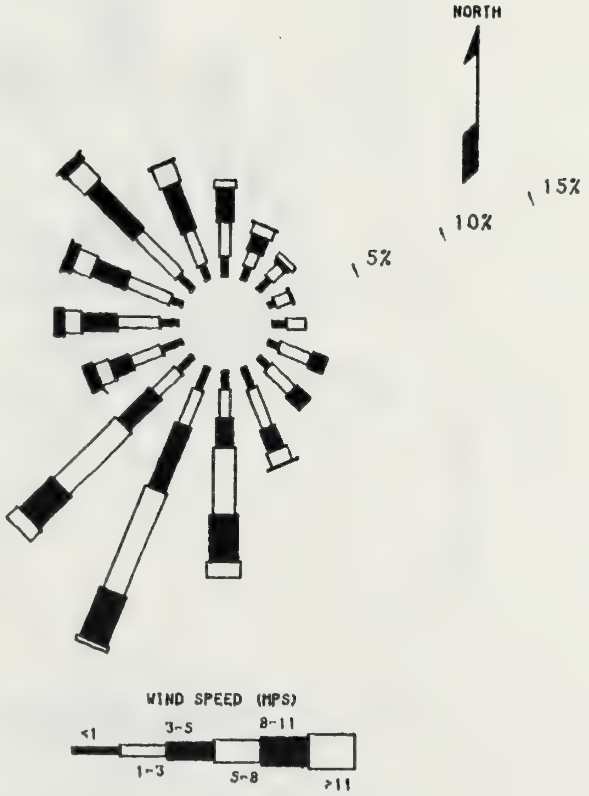
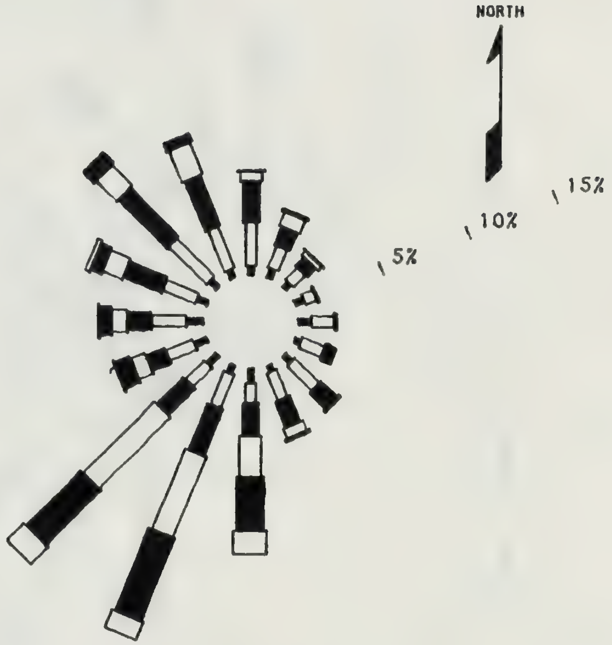


FIGURE 2.3.3.3-7

AB23 • 60M QUARTERLY WIND ROSE
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1941



WIND SPEED (MPS)

<1	1-3	3-5	5-8	8-11	>11
▬	☐	■	☐	■	☐

FIGURE 2.3.3.3-8

AD20 QUARTERLY WIND ROSE @ 10M
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2017

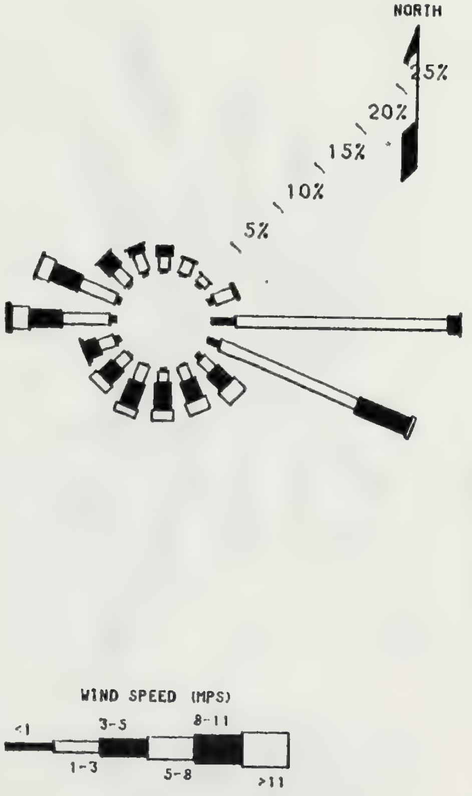


FIGURE 2.3.3.3-9

AB23 • 10M QUARTERLY WIND ROSE
JUN '82 - AUG '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2089

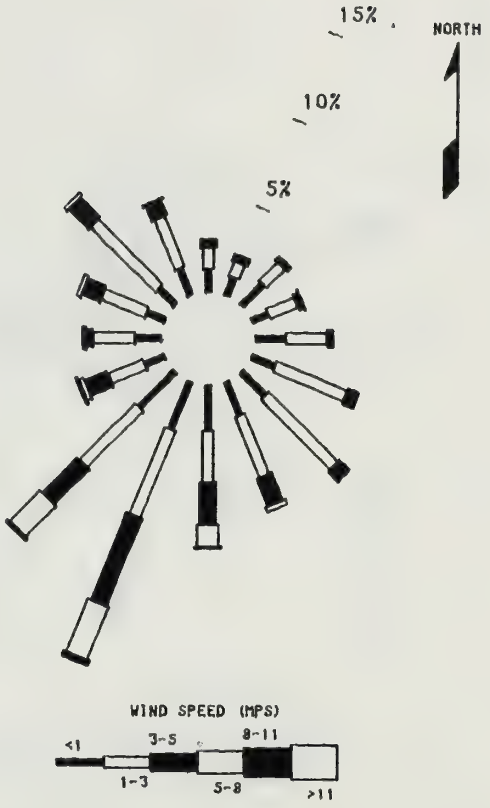


FIGURE 2.3.3.3-10

AB23 • 30M QUARTERLY WIND ROSE
JUN '82 - AUG '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2099

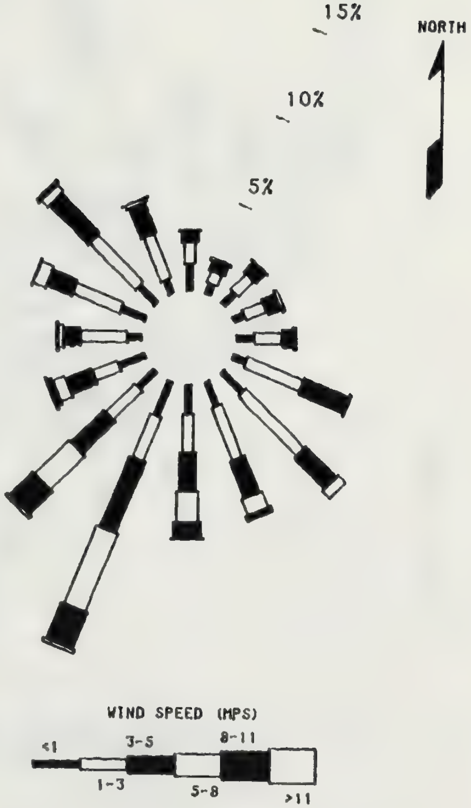


FIGURE 2.3.3.3-11

AB23 • 60M QUARTERLY WIND ROSE
JUN '82 – AUG '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2117

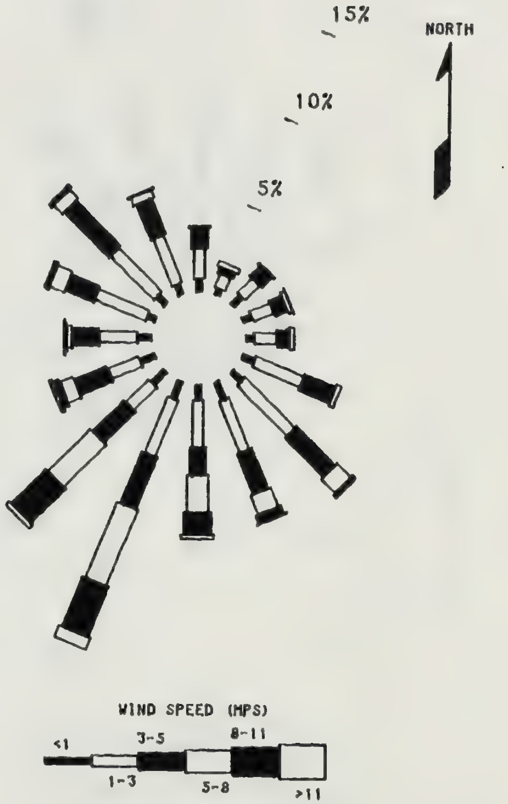


FIGURE 2.3.3.3-12

AB23 QUARTERLY WIND ROSE @ 10M
SEP '82 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2097

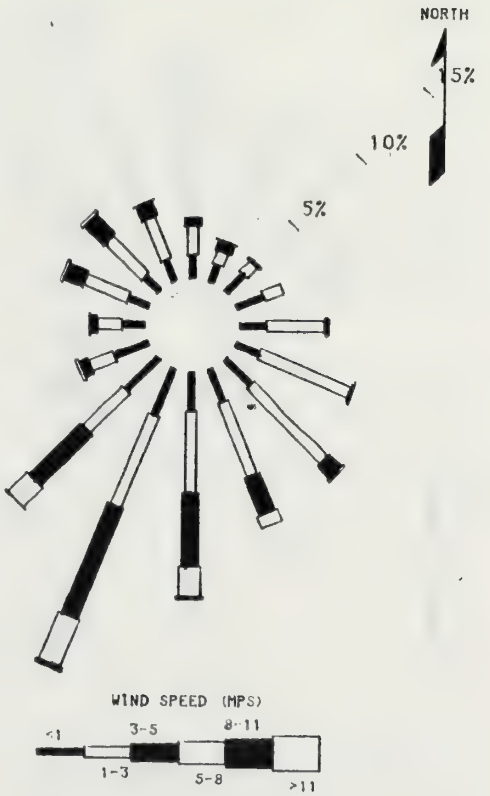


FIGURE 2.3.3.3-13

AB23 QUARTERLY WIND ROSE @ 30M
SEP '82 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2084

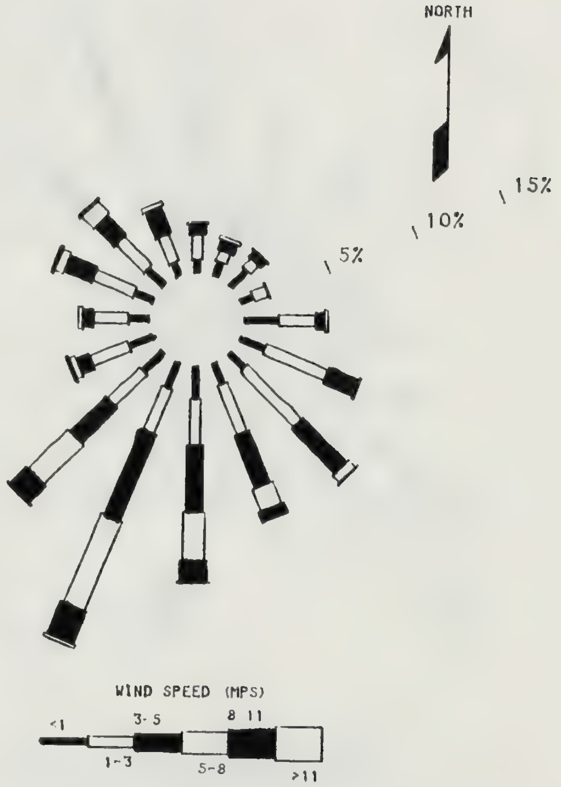


FIGURE 2.3.3.3-14

AB23 QUARTERLY WIND ROSE @ 60M
SEP '82 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2135

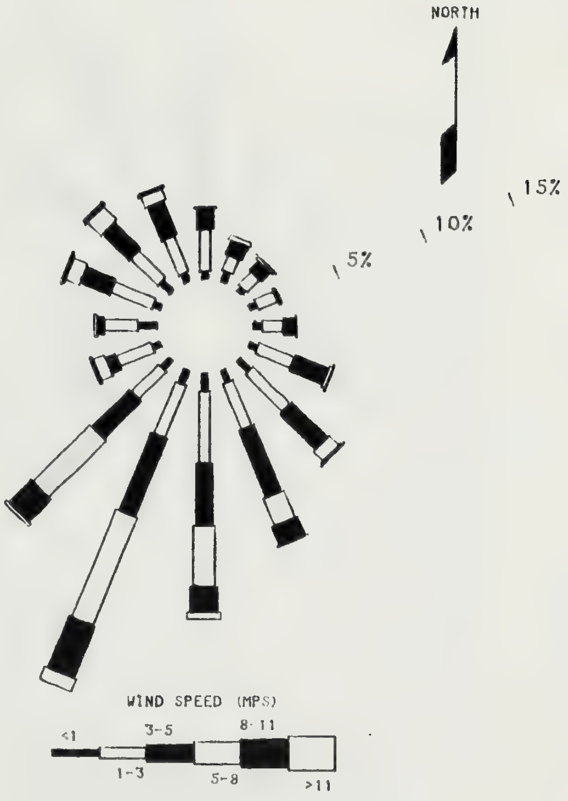


FIGURE 2.3.3.3-15

AB23 ANNUAL WIND ROSE @ 10M
DEC '81 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 8123

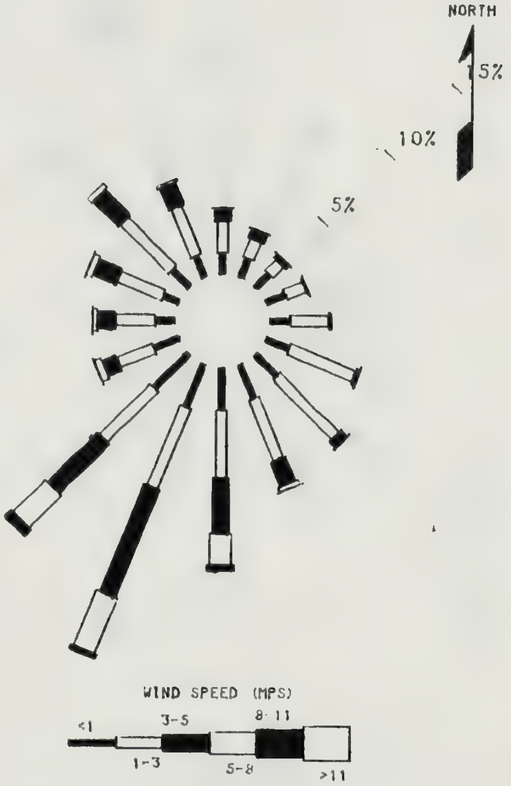


FIGURE 2.3.3.3-16

AB23 ANNUAL WIND ROSE @ 30M
DEC '81 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 8144

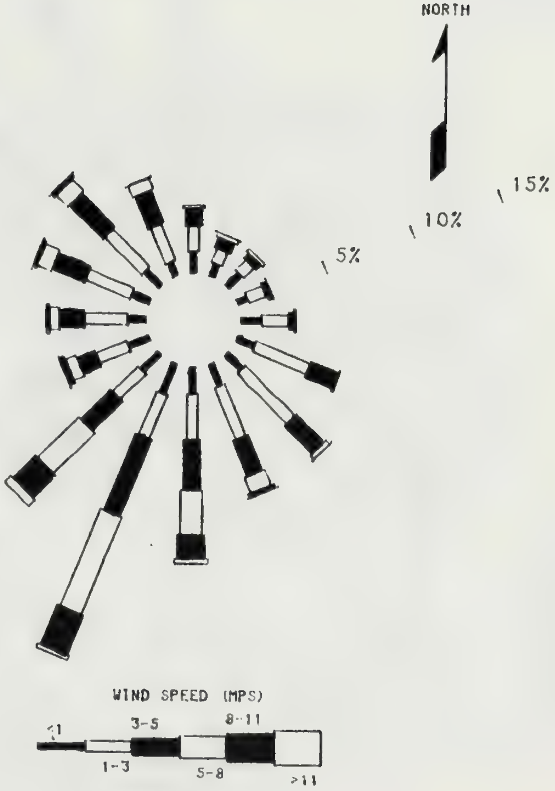


FIGURE 2.3.3.3.-17

AB23 ANNUAL WIND ROSE @ 60M
DEC '81 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 8227

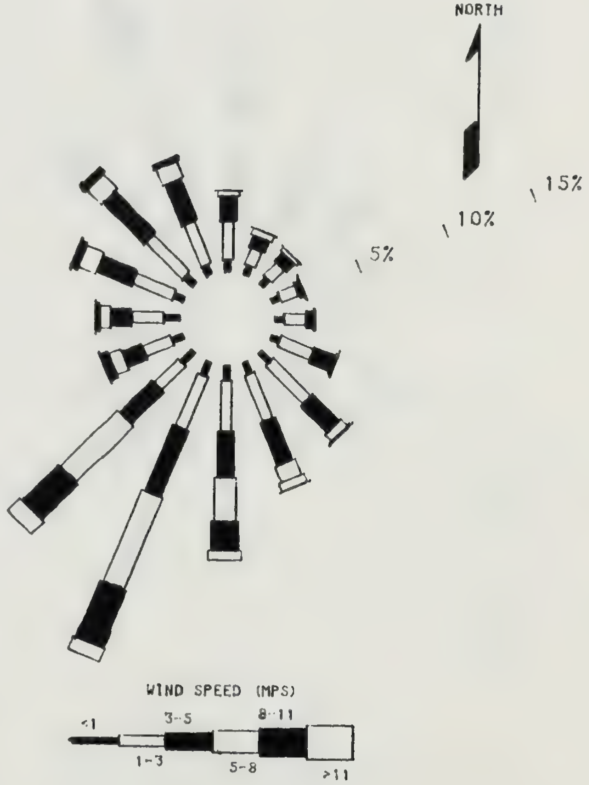


TABLE 2.3.3.3-8

AVERAGE HOURLY STABILITY CLASSES

SOURCE: Temperature difference between 60 meter and 10 meter levels on the met tower
(Adjusted for wind speed)

Month	HOUR																								Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Dec.1981	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	E	E	E	E	E	E	E	D
Jan.1982	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	D	D	E	E	E	E	E	D
Feb.	C	C	E	E	E	E	E	E	D	D	C	C	C	C	C	C	C	D	D	E	E	E	E	E	D
Mar.	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	C	C	D	D	E	E	E	E	E	D
April	E	E	E	E	E	E	E	E	D	C	C	D	C	C	C	C	C	C	D	D	D	E	E	E	D
May	E	E	E	E	E	E	E	D	D	D	C	C	C	C	C	C	C	D	D	D	E	E	E	E	D
June	E	E	F	F	E	E	E	D	D	D	C	C	C	C	C	C	C	C	D	D	E	E	E	E	D
July	E	E	E	E	F	E	E	E	D	C	C	C	C	C	C	C	C	C	D	E	E	E	E	E	D
Aug.	E	E	E	E	E	E	E	E	D	D	C	C	D	C	C	C	C	D	D	E	E	E	E	E	D
Sept.	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
Oct.	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	C	D	D	E	E	E	E	E	E	D
Nov.	E	E	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	D	E	E	E	E	E	E	E

Key: ▨ Unstable Class

D Neutral

▥ Stable Class

TABLE 2.3.3.3-8 (Cont'd)

AVERAGE HOURLY STABILITY CLASSES

SOURCE: Temperature difference between 60 meter and 10 meter levels on the met tower
(Adjusted for wind speed)

Month	HOUR																								Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Dec.1982	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D
Jan.1983																									
Feb.																									
Mar.																									
April																									
May																									
June																									
July																									
Aug.																									
Sept.																									
Oct.																									
Nov.																									

Key:	
░	Unstable Class
D	Neutral
▤	Stable Class

TABLE 2.3.3.3-9

METEOROLOGICAL SUMMARY: STABILITY CLASS FREQUENCIES (%)

Source: Temperature difference between 60 meter and 10 meter levels on the met tower
(Adjusted for wind speed)

Pasquill-Gifford Stability Class	dT/dz Range[1] for this Stability Class (°C/100m)	1981	1982											Annual Mean
		Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
A	<-1.9	0.3	0.1	1.7	1.9	3.5	2.3	2.9	3.8	3.6	0.9	1.5	0.6	1.9
B	-1.9 to -1.7	1.8	4.7	10.0	16.4	11.1	11.1	8.7	10.8	12.0	4.8	5.3	5.5	8.5
C	-1.7 to -1.5	5.6	8.3	8.4	11.4	12.2	8.9	7.8	6.1	3.8	4.3	6.9	6.4	7.5
D	-1.5 to -0.5	47.7	50.6	37.5	38.7	33.4	31.0	31.2	28.5	22.1	36.6	32.8	32.2	35.2
E	-0.5 to 1.5	28.8	24.1	28.0	26.3	28.2	36.1	28.3	28.5	34.6	29.5	35.9	34.1	30.2
F	>1.5	15.8	12.2	14.4	5.3	11.6	10.6	21.1	22.3	23.9	23.9	17.6	21.2	16.7
	Total Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 2.3.3.3-9 (Cont'd)

METEOROLOGICAL SUMMARY: STABILITY CLASS FREQUENCIES (%)

Source: Temperature difference between 60 meter and 10 meter levels on the met tower
(Adjusted for wind speed)

Pasquill-Gifford Stability Class	dT/dz Range[1] for this Stability Class (°C/100m)	1982	1983											Annual Mean
		Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
A	<-1.9	1.4												
B	-1.9 to -1.7	3.9												
C	-1.7 to -1.5	6.0												
D	-1.5 to -0.5	38.7												
E	-0.5 to 1.5	34.2												
F	>1.5	15.8												
	Total Percentage	100.0												

VISIBILITY

2.3.4 Visibility

The visibility monitoring program has been co-sponsored by the CB and Rio Blanco Shale Oil Projects. There are no state or federal requirements for visibility monitoring; however, the program is required under the Federal Oil Shale Lease Environmental Stipulations.

Figure 2.3.4-1 shows the four views used to monitor visual range.

Data collected during 1982 are presented on Table 2.3.4-1. Variations in daily mean visual range for Spring and Fall are shown on Figures 2.3.4-2 and 2.3.4-3, respectively.

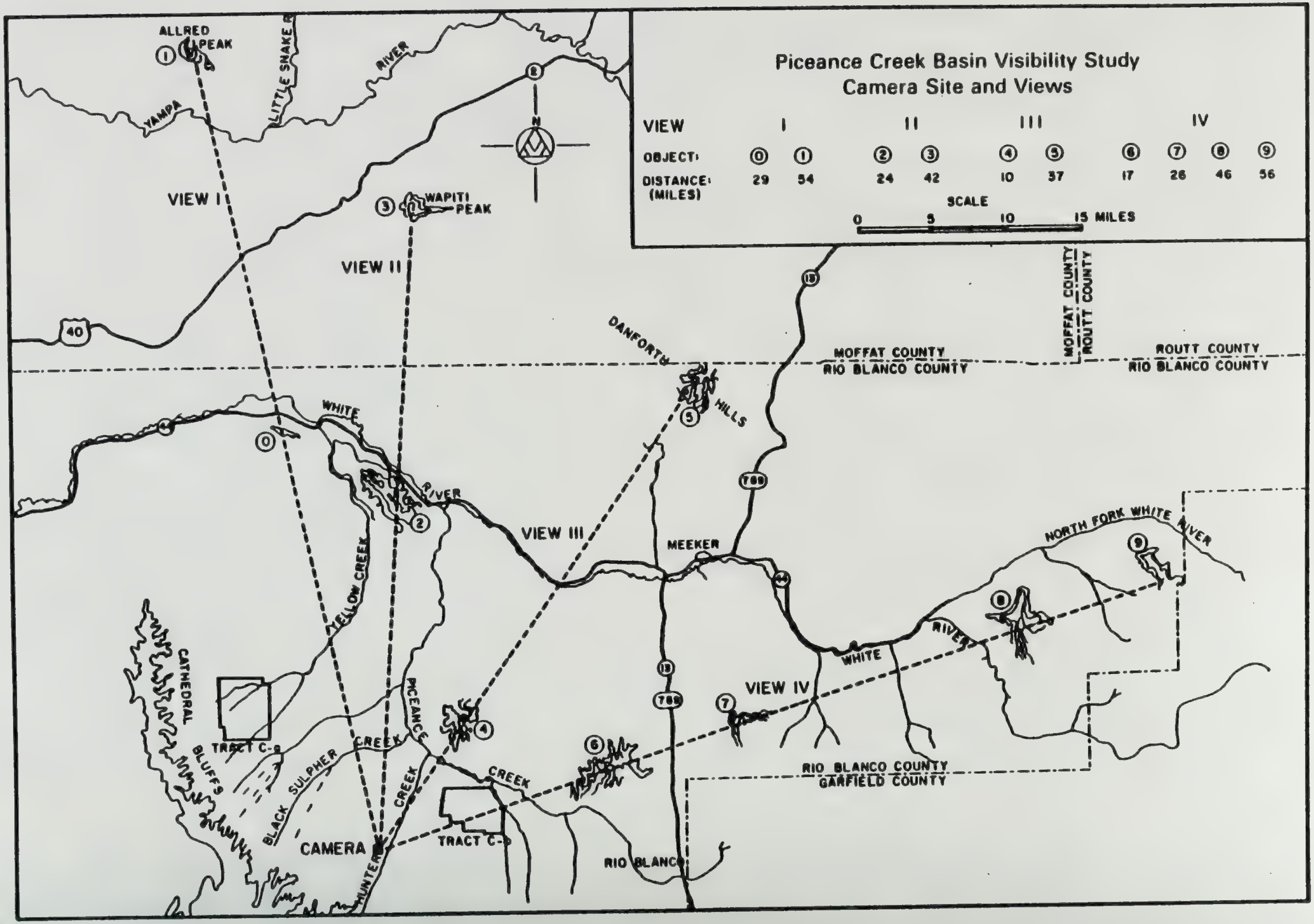

Piceance Creek Basin Visibility Study
Camera Site and Views
VIEW I II III IV
OBJECT: ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
DISTANCE: (MILES) 29 54 24 42 10 37 17 26 46 56
SCALE
0 5 10 15 MILES
N
ALLRED PEAK
YAMPA
LITTLE SNAKE R
RIVER
WAPITI PEAK
VIEW I
VIEW II
VIEW III
VIEW IV
40
13
789
64
DANFORTH HILLS
MOFFAT COUNTY
RIO BLANCO COUNTY
ROUTT COUNTY
WHITE
RIVER
MEEKER
NORTH FORK WHITE RIVER
YELLOW CREEK
PICEANCE
CREEK
CATHEDRAL
BLUFFS
TRACT C-b
TRACT C-a
BLACK SULPHER
CAMERA
HUNTER
RIO BLANCO
GARFIELD COUNTY

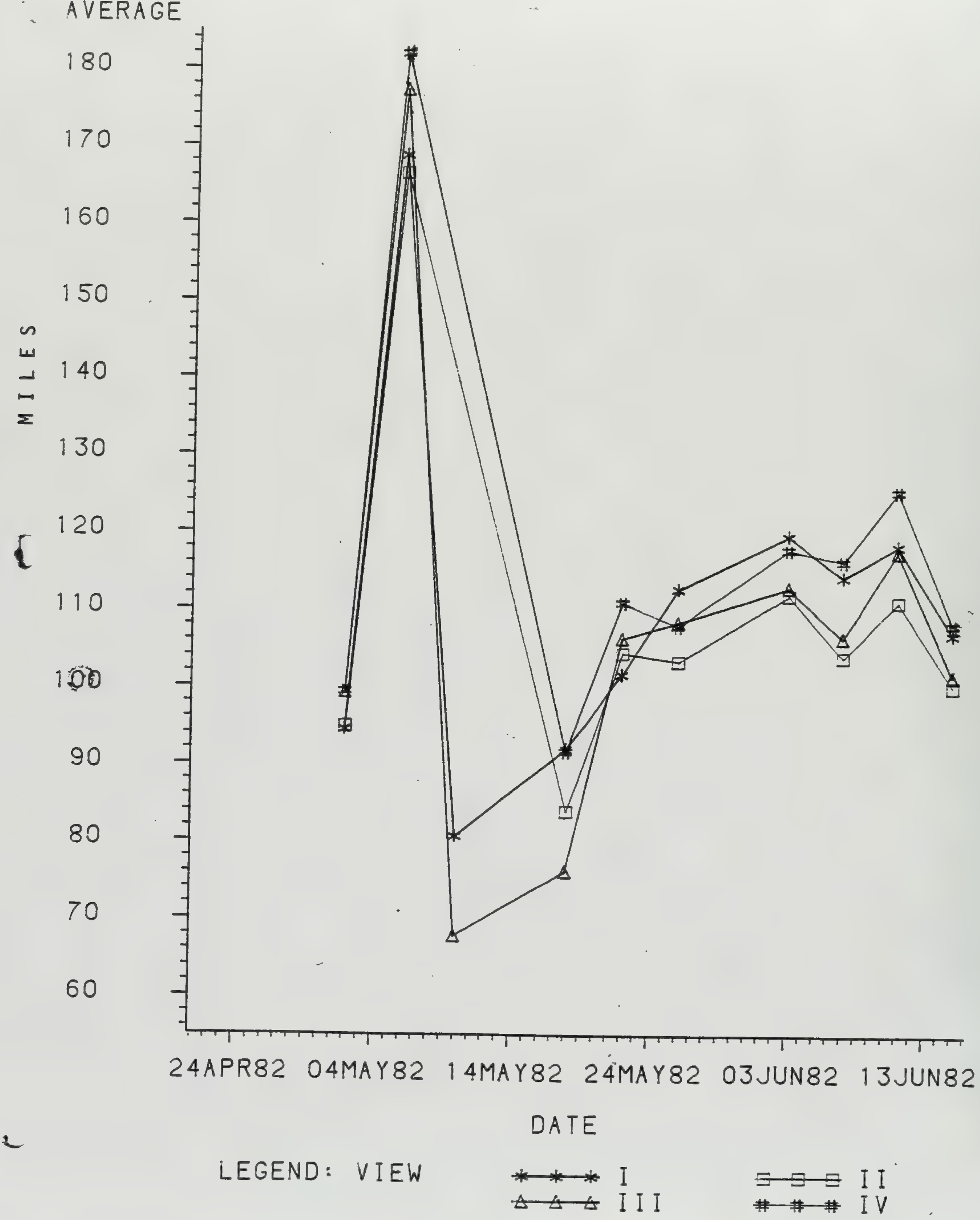
Figure 2.3.4-1

MEAN VISUAL RANGE BY DATE

YR	MO	DY	N	MILE
82	5	3	28	96.961
82	5	7	27	173.924
82	5	11	14	74.521
82	5	19	25	85.499
82	5	23	28	105.826
82	5	27	28	108.149
82	6	4	28	115.729
82	6	8	27	110.263
82	6	12	28	118.306
82	6	16	28	104.362
82	9	4	28	81.265
82	9	16	28	76.477
82	9	20	20	70.375
82	9	24	28	85.166
82	9	28	20	60.375
82	10	2	25	69.435
82	10	6	18	77.305
82	10	10	26	70.268
82	10	14	27	79.233
82	10	18	27	78.233
82	10	22	28	73.402

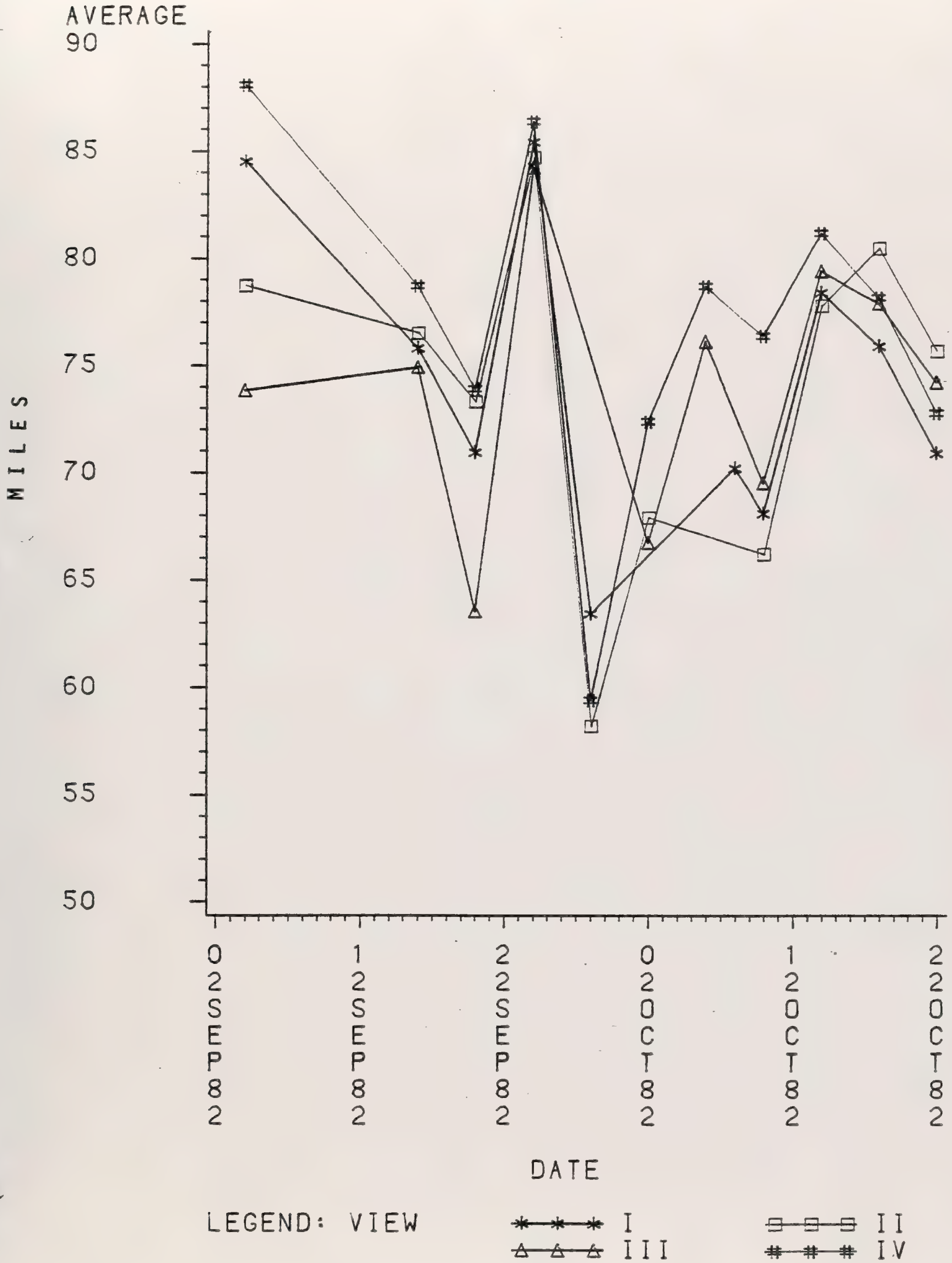
VARIATION IN DAILY MEAN VISUAL RANGE BY VIEW

SPRING 1982



VARIATION IN DAILY MEAN VISUAL RANGE BY VIEW

FALL 1982



ATMOSPHERIC
DIFFUSION STUDIES

2.3.5 Atmospheric Diffusion Studies

New atmospheric diffusion modeling studies were completed in the Fall of 1982 to support an amendment to the CB Prevention of Significant Deterioration (PSD) permit application to the EPA Region VIII, submitted in December 1982. A copy of this application is on file with the Deputy Minerals Manager - Oil Shale.

The tables of wind persistence utilized are presented here as Tables 2.3.5-1 and 2.3.5-2 for PSD Classes II and I respectively. The following procedures were used to obtain these summary tables:

1) For each of the 5 most recent years (1977 through 1981) ranked tables of daily hours of wind persistence by atmospheric stability class by wind sector were generated.

2) Only ≥6 hours of persistence were retained for summary, consistent with the EPA Valley model. This model assumes a 6-hour wind persistence for 24-hour averaging times.

3) Generally from a modeling point of view ambient pollutant concentrations are highest for cases where the product of the wind speed multiplied by wind direction standard deviation is lowest. Thus low values of this product were given priority; they are shown in the tables.

4) For PSD Class II stable cases, historically the worst cases correspond to SSW winds which cause plume impaction on close-in high ground to the NNE of the Tract.

5) For PSD Class I, only winds from the W and WSW passing over CB intersect the Flattops Class I Wilderness Area. A further constraint imposed was that at least a 6-hour dwell or residence time over Flattops for the specified wind direction and stability class was required (after the first air parcel reached Flattops).

Data used to generate the above summaries for 1981 follow:

(1) Diurnal hourly stability classes by month for 1981; and
(2) Diurnal wind speed and direction by stability class by month for 1981.

TABLE 2.3.5-1

Summary of Meteorological Worst Case Candidates 1977 - 1981

Class II

STABILITY CLASS	WIND PERSISTENCE (hrs)	WIND SECTOR	WIND SPEED (mps)	σ.WS(1)	AMBIENT AIR TEMP (°K)	BAR. PRESSURE (mb)	DATE
A	8	WNW	1.3	16.03	271	789	1-23-77
A	6	W	1.0	-	265	780	3-03-77
B	7	WNW	2.0	18.67	266	786	12-08-80
B	7	WNW	2.9	15.52	272	787	4-15-77
B	14	WNW	3.7	19.97	266	776	3-02-77
B	9	SSW	3.3	20.89	273	794	3-06-77
B	13	NW	3.3	-	272	786	4-19-77
B	7	NNW	1.9	24.29	270	791	1-23-77
D	10	S	11.9	95.41	285	781	5-16-77
E	9	SSW	1.5	9.58	274	(790)	11-26-77
E	6	SSW	1.9	-	280	794	1-13-78
E	6	SSW	3.4	16.76	288	785	4-26-81
F	8	SSW	1.1	9.16	275	(790)	10-23-77
F	6	SSW	1.6	10.64	273	(790)	10-08-77
F	6	SSW	1.6	-	280	(790)	12-25-77
F	6	SSW	2.5	-	272	785	-
Annual	-	all	all	-	281	787	1981

( ) indicates annual average value when actual data are not available.

(1) σ = Horizontal wind direction standard deviation (deg) x WS - Wind Speed (mps). Vertical wind speed is not measured.

TABLE 2.3.5-2

Summary of Meteorological Worst Case Candidates 1977 - 1981

Class I

STABILITY CLASS	WIND PERSISTENCE (hrs)	WIND SECTOR	WIND SPEED (mps)	σ.WS(1)	AMBIENT AIR TEMP (°K)	BAR. PRESSURE (mb)	DATE
D	14	SW	2.6	13.30	272	778	1-08-80
D	11	WSW	2.6	24.64	294	774	2-20-80
D	9	W	3.9	37.50	267	772	12-27-81
D	14	WNW	5.2	41.60	272	(790)	12-04-77
D	10	SW	3.9	43.99	273	777	3-07-80
D	7	W	7.2	58.29	288	(790)	11-16-77
D	10	WSW	7.9	-	281	772	9-18-78
Annual	-	all	all	-	281	787	1981

( ) indicates annual average value when actual data are not available

(1) σ = horizontal wind direction standard deviation (deg) x WS = wind speed (mps). Vertical wind speed is not measured.

LIST OF TABLES

Description	Page No.
Hourly Stability Class, 1981	
January	II-104
February	II-105
March	II-106
April	II-107
May	II-108
June	II-109
July	II-110
August	II-111
September	II-112
October	II-113
November	II-114
December	II-115
Hourly Wind Speed and Wind Direction for Stability Class A, 1981	
January	II-116
February	II-117
March	II-118
April	II-119
May	II-120
June	II-121
July	II-122
August	II-123
September	II-124
October	II-125
November	II-126
December	II-127
Hourly Wind Speed and Wind Direction for Stability Class B, 1981	
January	II-128
February	II-129
March	II-130
April	II-131
May	II-132
June	II-133
July	II-134
August	II-135
September	II-136
October	II-137
November	II-138
December	II-139
Hourly Wind Speed and Wind Direction for Stability Class C, 1981	
January	II-140
February	II-141
March	II-142
April	II-143
May	II-144
June	II-145
July	II-146
August	II-147
September	II-148
October	II-149
November	II-150
December	II-151

LIST OF TABLES (Contd)

Description Page No.

Hourly Wind Speed and Wind Direction for Stability Class D, 1981
- January II-152
- February II-153
- March II-154
- April II-155
- May II-156
- June II-157
- July II-158
- August II-159
- September II-160
- October II-161
- November II-162
- December II-163

Hourly Wind Speed and Wind Direction for Stability Class E, 1981
- January II-164
- February II-165
- March II-166
- April II-167
- May II-168
- June II-169
- July II-170
- August II-171
- September II-172
- October II-173
- November II-174
- December II-175

Hourly Wind Speed and Wind Direction for Stability Class F, 1981
- January II-176
- February II-177
- March II-178
- April II-179
- May II-180
- June II-181
- July II-182
- August II-183
- September II-184
- October II-185
- November II-186
- December II-187

```
STABILITY CLASS USING DT/DZ                                        CB-TRACT
DT 60-10M                                                          TRAILER AA23
WS 10M                                                              JAN  1981
                                                                   OCCIDENTAL OIL SHALE, INC.

                                         HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  AVE

  1  ( )    E    F    F  ( )  ( )  ( )    F    F  ( )    D    C    C    D    D    D    E    F    F  ( )  ( )    F    F    F  ( )
  2    F    F    F    E    F    E    F    F    E    D    C    B    B    C    C    D    D    E    E    E    E    F    E    E    E
  3    D    E    F    F    E    E    E    F    E    E    D    B    B    B    C    C    D    E    F    E    E    E    E    E    E
  4    E    F    F    F    E    E    E    E    E    D    D    C    C    C    B    B    D    D    D    D    D    D    D    E    D
  5    D    E    D    D    D    E    D    D    D    D    D    C    C    B    B    A    D    D    D    D    D    E    D    D    D
  6    D    D    D    D    E    F    E    E    F    F  ( )    D    D    D    D    D    D  ( )    E    E    F    F  ( )    F    E
  7    F    F    F    F    F    F    F    F    F    F    E    F    E    D    D    D    D    E    E    E    E  ( )    F    F    E
  8    F    E    F  ( )    F    F    F    F    F    E    E  ( )    D    D    D    D    E    E    E    E    F    F    F    F    E
  9    F    F    F    F    F    F    F    F    F  ( )    D    D    D    D    D    D    D    E    E    E    E    E    F  ( )    E
 10  ( )    F    F    F    F    F    F  ( )    E    E    D    D    D    D    C    D    D    E    E    E    E    E  ( )    F    E
 11    F    F    E    F  ( )    E  ( )  ( )    F    F    D    C    C    D    D    D    D    E    E    E    E    E    F    F    E
 12    F    F    F    E    F    E  ( )  ( )  ( )    F    E    D    C    D    D    D    D    E    E    E    E    F    F  ( )    E
 13    F    F    F    F    F    F    F  ( )    F  ( )    D    C    B    D    C    D    D    E    E    E    E    E  ( )    E    E
 14    F    F    F    F    F    F  ( )    F    F  ( )  ( )  ( )  ( )  ( )    C    C    D    E    E    F    F    E    E    E    E
 15    F    F    F    E    E    E    E  ( )    E    E    D    C    D    D    D    D  ( )    E    E    E    E    E    F    E    E
 16    E    E    E    E    E    E    E    E    E    B    C    A    A    B    A    C    C    D    E    D    E    E    D    E    D
 17    E    E    E    E    E    F         E    F    D    C    D    C    C    C    C    D    E    E    E    F    F  ( )    E    E
 18    E  ( )    F    F    F    F         E         E         C    C    B    B    C    D    D         E    E    E    E    E    D
 19    E    E    E    E    E  ( )    E    F    E    E         C    D    C    C    C    D    D    E    E    F    F    F    F    E
 20    F    E    F    F    F    E  ( )    E    E    D    B    B    B    C    D    C    D    E    E    E    E    E    E    E    D
 21    E    E    E    F  ( )    F    F    F  ( )    D  ( )    C    D    C    B    D    D    E    E    E    F  ( )    F    F    E
 22    E    F    F    F    F    F    F    E  ( )    E    D    D    C    C    C    D    D    E    E    E    E    F    F    F    E
 23  ( )    F  ( )    F    F    F    F    F    F    D    D    C    C    D    C    D    D    D    E    F    F    F    E    E    E
 24    E    E    D    E    E    E    E    F    E    B    D    D    D    D    B    C    D    D    D    D    D    D    C    D    D
 25    E    E    E    E  ( )    E    E    E    D    B    A    A    B    B    B    B    D    D    D    F    E    F    F    F    D
 26    E    E    E    E    F    E    E    F    E    B    B    C    C    B    B    B    C    D    D    D    D  ( )    D    E    D
 27  ( )    D    D    D    D    E    E    E    D    C    B    B    B    B    B    C    D    D    D    D    D    D    D    D    D
 28    D    D    D    D    D    D    D    D    D    C    C    C    D    C    D    B    D    E    E    D    D    D    D    D    D
 29    D    D    D    D    D    D    E    D    D    D    B    C    B    B    B    B    C    D    D    D    D    D    D    D    D
 30    E    E    D    E    E    E    D    D    D    D    D    D    C    C    C    C    D    D    D    E    D    E    D    D    D
 31    D    D    E    F    F    E    E    D    D    C    B    C    C    C    D    D    C    D    D    D    D    E    D    D    D
AVE    E    E    E    E    E    E    E    E    E    D    C    C    C    C    C    C    D    E    E    E    E    E    E    E    E

 TOTAL OCCURRENCES:  A=  6     B= 42     C= 68     D=206     E=208     F=158     HOURS MISSING= 50
 (01/06/81-HRI)
```

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	D	D	E	D	D	D	D	D	D	D	D	E	E	D	C	D	D	E	E	F	F	F	( )	D
2	F	F	F	F	F	F	F	F	F	E	( )	D	D	D	D	B	D	E	E	E	E	F	F	E	E
3	F	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	E	E	E	E	E	F	E
4	F	F	E	E	F	D	E	E	E	D	D	D	D	D	C	C	D	D	E	E	E	E	( )	E	E
5	F	F	E	F	F	F	F	E	F	E	D	D	D	D	C	B	D	D	E	E	E	E	E	F	E
6	E	F	F	F	F	E	E	E	E	D	C	B	B	D	C	D	D	D	E	E	F	E	E	E	E
7	F	F	F	F	F	E	F	F	F	E	D	D	C	B	C	C	C	D	E	F	F	F	F	F	E
8	F	E	E	E	E	E	E	E	D	C	C	C	D	C	C	C	C	D	E	E	E	E	E	E	D
9	E	D	D	D	D	D	D	D	C	B	B	B	B	B	B	D	D	C	D	D	D	D	D	D	C
10	D	D	B	B	B	D	D	C	B	B	B	A	B	B	B	B	B	D	E	F	F	E	F	F	C
11	E	E	E	E	D	E	E	E	D	D	D	C	C	C	C	C	B	C	C	D	D	D	D	D	D
12	D	E	E	E	E	E	F	E	D	D	D	D	D	D	D	D	C	D	E	E	E	F	F	F	E
13	F	E	F	F	F	F	F	F	E	D	D	D	D	C	C	B	D	D	D	E	E	F	F	E	E
14	E	E	E	E	E	E	F	E	D	D	D	D	B	C	C	C	D	D	E	E	E	( )	E	E	D
15	E	D	D	D	E	E	F	E	D	D	D	C	C	D	D	D	D	D	E	E	E	F	E	E	D
16	E	E	E	E	F	F	F	F	E	D	D	B	C	B	C	C	C	D	E	E	F	F	F	F	E
17	F	F	E	F	F	E	E	E	E	E	D	D	B	C	C	D	D	D	E	E	E	E	E	E	E
18	E	F	E	E	E	F	F	F	F	D	D	D	C	B	B	C	C	E	E	E	E	F	E	F	E
19	F	E	E	E	E	E	F	F	E	D	C	B	B	( )	( )	( )	D	D	D	D	D	D	D	D	D
20	D	D	D	D	E	E	E	D	D	C	C	C	C	C	B	C	D	C	D	D	D	D	D	E	D
21	E	E	D	D	D	D	E	D	D	C	B	B	B	B	B	A	B	D	D	E	F	( )	E	F	D
22	E	F	F	E	E	F	F	E	D	D	C	C	B	D	B	B	C	D	E	F	E	F	F	F	E
23	E	F	F	F	F	F	E	F	F	D	B	B	B	B	B	B	C	D	E	E	F	E	F	F	E
24	F	F	F	F	F	E	E	E	E	( )	( )	D	C	C	C	D	D	D	E	E	E	D	E	E	E
25	F	E	E	E	E	F	F	E	D	B	D	D	C	D	D	D	D	D	D	D	E	E	E	E	E
26	E	E	E	E	D	D	D	D	D	D	D	D	D	D	C	B	B	D	E	D	D	D	D	D	D
27	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	F	E	E	D
28	F	F	E	E	E	E	F	E	D	D	B	B	B	B	C	C	C	D	E	F	E	E	E	E	D
AVE	E	E	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	D	E	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 2 B= 55 C= 65 D=210 E=199 F=131 HOURS MISSING= 10

(01/06/83-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	E	F	F	F	F	( )	F	F	E	D	C	B	C	C	C	B	C	D	E	E	E	E	E	E	D
2	E	E	E	E	E	E	E	E	E	D	B	B	B	B	C	D	D	D	D	E	D	D	E	E	D
3	E	E	E	E	E	F	F	F	E	D	D	D	D	C	C	D	C	D	D	D	D	D	D	D	D
4	D	D	D	D	D	D	D	D	D	B	B	B	B	B	B	C	C	D	E	E	E	F	F	F	D
5	F	F	F	F	F	E	F	F	C	C	B	C	B	B	B	B	D	D	E	E	E	E	E	E	D
6	F	( )	E	E	E	E	E	E	E	D	( )	C	C	E	B	F	B	F	F	( )	D	E	E	E	E
7	E	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
8	E	F	E	( )	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	D	E	E	E	E
9	E	F	F	E	F	F	E	F	E	E	D	D	D	D	D	D	D	D	E	E	F	F	F	F	E
10	E	F	E	E	F	E	F	F	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E	E
11	F	F	E	E	E	F	E	( )	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D	D	E
12	D	D	D	D	E	D	E	D	D	B	D	D	D	C	D	D	D	D	D	F	E	E	F	F	D
13	F	( )	F	F	F	F	F	F	( )	( )	( )	( )	C	B	B	C	D	E	E	E	E	E	F	F	E
14	F	F	F	E	E	F	E	E	D	D	C	B	B	C	B	D	C	D	E	E	E	E	E	E	D
15	E	E	E	F	E	E	F	F	D	D	D	D	B	D	C	C	C	D	E	F	F	F	F	F	E
16	E	F	F	E	E	F	E	E	D	B	C	C	C	C	C	D	D	D	D	D	D	D	E	E	D
17	E	D	D	D	D	D	D	C	D	D	C	C	D	C	C	D	C	D	D	E	E	E	E	E	D
18	D	D	D	D	D	D	E	E	D	C	C	D	C	D	C	C	C	D	D	E	E	E	E	E	D
19	E	E	E	E	E	E	E	E	D	C	C	C	B	C	B	C	D	D	D	D	D	D	D	D	D
20	D	D	E	E	E	E	E	E	D	B	B	C	D	C	C	B	D	D	D	E	E	F	E	E	D
21	D	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	C	D	D	E	F	F	E	F	D
22	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	C	D	D	E	E	E	E	( )	E	E
23	E	E	E	E	E	F	E	D	D	D	C	B	C	B	C	C	D	D	E	E	F	F	F	F	D
24	F	F	E	D	D	E	E	E	D	B	D	D	C	C	D	C	D	D	D	E	F	F	F	F	E
25	F	F	F	F	F	F	F	F	D	C	C	B	B	B	B	C	D	D	D	D	E	D	E	E	D
26	E	D	E	E	E	E	E	D	D	C	D	D	D	D	D	D	D	D	D	D	D	E	D	C	D
27	D	B	D	D	D	D	D	D	D	D	D	D	D	C	C	B	B	B	D	E	E	E	E	E	D
28	D	E	D	D	D	D	D	D	D	C	D	C	D	D	D	D	D	D	D	D	D	E	E	E	D
29	E	E	F	E	E	E	E	D	D	D	D	D	B	B	B	C	C	C	D	E	E	D	D	E	D
30	E	E	D	D	D	B	B	B	D	C	D	D	D	B	E	D	D	D	D	E	E	F	E	E	D
31	E	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
AVE	E	E	E	E	E	E	E	E	D	D	C	C	C	C	C	C	D	D	D	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 0 B= 50 C= 77 D=276 E=218 F=111 HOURS MISSING= 12

(01/06/83-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	E	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F	E
2	E	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D	D	D	D
3	D	D	D	D	D	D	D	D	B	C	D	D	D	D	D	C	D	D	D	D	D	D	D	E	D
4	E	E	E	E	D	D	D	D	D	D	D	E	E	D	D	E	D	D	D	D	E	E	F	F	E
5	F	F	( )	F	F	F	F	F	D	D	D	E	E	E	D	D	D	D	E	E	E	E	E	E	E
6	E	E	E	E	E	D	D	D	D	D	D	D	D	D	C	D	C	D	E	E	F	E	E	E	D
7	E	E	E	E	( )	F	F	E	D	D	D	C	B	B	B	C	C	D	E	D	D	E	E	D	D
8	D	D	D	D	D	D	D	D	C	B	B	B	B	B	B	B	B	D	D	E	E	F	E	F	D
9	E	F	F	E	E	D	D	D	C	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
10	E	F	E	D	E	E	F	E	C	B	C	C	D	D	D	D	C	D	E	E	E	E	E	F	D
11	E	E	E	F	E	E	E	D	C	C	C	D	D	D	D	D	D	D	E	F	E	E	F	E	E
12	E	E	E	E	E	E	E	D	B	B	C	D	D	C	C	C	C	D	E	E	E	E	E	E	D
13	E	E	E	E	F	E	E	D	B	D	B	B	B	C	C	C	D	D	E	E	E	F	F	F	D
14	F	F	( )	F	F	F	F	D	D	D	D	B	B	C	D	B	D	E	E	E	F	E	D	D	D
15	D	E	D	D	D	D	D	D	C	B	B	B	C	D	D	D	C	C	D	D	E	E	F	F	D
16	F	F	F	F	E	F	F	E	D	C	B	B	B	D	D	B	D	D	E	E	E	E	E	F	E
17	F	F	F	F	F	F	F	E	C	B	B	B	B	B	B	B	B	C	E	F	E	F	F	F	D
18	F	F	F	F	F	F	E	D	D	D	C	D	C	D	B	D	D	D	D	D	D	D	D	D	D
19	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	B	D	E	E	E	F	F	D
20	F	E	F	E	E	E	F	E	D	D	D	D	D	D	D	C	C	C	D	E	E	E	E	F	E
21	E	F	E	F	F	F	E	D	B	C	C	C	C	C	D	D	B	C	D	D	D	D	D	D	D
22	E	E	E	E	E	E	E	( )	D	B	B	A	B	B	B	B	B	C	D	E	E	F	F	F	D
23	F	E	E	F	F	F	F	D	D	D	B	B	B	B	B	B	B	D	E	E	E	F	F	F	D
24	F	F	F	F	F	F	F	E	C	C	A	C	B	B	B	C	C	D	D	F	F	F	F	E	D
25	E	F	F	F	F	F	F	D	D	B	B	C	D	D	D	D	C	D	D	F	F	E	E	E	E
26	F	E	E	E	E	E	E	D	B	C	D	D	D	D	D	D	D	D	E	E	F	E	E	F	E
27	E	F	F	F	F	F	F	D	D	D	B	B	C	D	C	C	B	D	D	D	D	D	D	D	D
28	E	E	F	E	E	E	D	B	C	C	B	B	B	B	B	B	B	D	D	E	E	E	E	F	D
29	F	( )	F	F	F	F	E	D	C	D	B	C	C	D	B	B	B	C	D	E	E	F	( )	( )	D
30	F	F	F	F	E	E	E	D	C	C	C	B	B	B	C	B	C	D	E	E	F	F	F	F	D
AVE	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	C	C	D	E	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 2 B= 80 C= 67 D=254 E=182 F=128 HOURS MISSING= 7

(01/06/83-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	F	F	F	F	E	F	D	D	B	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	D	D	D	E	D	D	D	D	D	E	E	( )
3	E	E	E	E	E	E	E	D	D	D	D	E	D	C	E	A	E	E	E	E	E	E	E	E	E
4	E	E	E	( )	E	( )	E	E	E	E	D	E	E	E	D	D	A	D	D	D	E	F	F	F	E
5	F	E	F	F	( )	F	F	E	E	D	E	D	A	C	D	D	D	D	D	D	D	D	D	D	D
6	D	E	E	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D
7	D	D	E	E	E	E	F	( )	D	D	D	B	D	B	B	C	B	C	D	E	F	F	E	D	D
8	D	E	E	F	E	F	F	E	D	C	B	C	D	E	D	C	C	B	D	D	D	D	D	D	D
9	D	D	D	D	D	D	D	D	D	E	E	E	C	D	D	B	D	D	D	C	E	D	D	F	D
10	F	E	E	F	F	F	F	E	B	B	B	A	C	D	D	B	D	D	E	E	E	D	D	D	D
11	D	D	E	E	E	D	C	C	E	E	B	B	B	D	D	D	E	D	C	A	D	E	F	F	D
12	F	F	F	E	F	F	F	E	E	E	C	D	C	B	D	C	D	D	C	D	E	E	( )	E	E
13	E	F	E	E	E	E	E	D	C	E	D	D	B	A	E	D	D	D	D	D	E	F	F	F	D
14	F	F	F	F	E	F	E	D	D	B	D	B	C	C	D	D	D	D	E	E	E	E	E	E	E
15	E	E	E	D	E	E	D	D	D	D	D	D	D	E	D	B	D	D	D	D	D	D	D	D	D
16	E	E	E	E	E	E	D	D	D	B	B	B	B	C	B	B	B	D	C	D	D	E	( )	E	D
17	E	E	E	E	D	C	D	D	D	D	D	D	D	D	D	D	B	D	D	C	D	D	C	D	D
18	D	D	D	D	D	D	D	C	D	D	D	D	D	C	B	A	D	D	E	F	F	( )	E	E	D
19	E	E	E	F	F	F	E	E	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
20	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D
21	E	E	E	E	E	D	E	D	D	( )	D	D	D	D	D	D	D	D	D	( )	E	F	F	E	E
22	E	F	F	E	E	E	D	B	B	B	B	B	D	E	D	D	D	E	D	E	E	E	D	D	D
23	D	E	E	E	D	D	D	D	A	D	D	E	E	E	E	D	E	E	D	B	E	E	E	E	D
24	E	( )	( )	F	F	F	F	E	D	D	D	D	D	D	D	D	E	E	E	F	E	E	F	E	E
25	E	F	F	F	E	F	F	E	D	D	D	D	C	E	D	E	D	D	D	E	F	F	F	E	E
26	E	E	E	F	E	E	E	D	A	A	D	B	D	D	C	C	D	D	D	D	D	E	D	D	D
27	E	D	E	E	E	E	D	D	D	C	( )	( )	( )	( )	B	B	B	C	C	C	C	D	E	E	D
28	E	E	E	E	E	E	E	E	E	E	D	A	E	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	E	E	D	D	D	D	E	E	D	E	E	E	F	( )
30	F	E	F	E	F	F	F	E	E	D	B	A	A	A	D	A	D	D	D	D	F	F	F	F	D
31	F	E	E	E	E	E	E	E	D	E	C	A	E	E	D	D	D	D	E	E	E	F	E	E	E
AVE	E	E	E	E	E	E	E	D	D	D	D	C	D	D	D	C	D	D	D	D	E	E	E	E	D

TOTAL OCCURRENCES: A= 16 B= 41 C= 38 D=268 E=223 F= 79 HOURS MISSING= 79

```
STABILITY CLASS USING DT/DZ                         CB-TRACT
DT 60-10M                                           TRAILER AA23
WS 10M                                              JUNE  1981
                                                    OCCIDENTAL OIL SHALE, INC.

                                      HOUR (LOCAL STANDARD TIME)

DAY    1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 AVE

  1  ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
  2  ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
  3  ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )   E   D   D   D   C   B   B ( )   D   E   D ( )
  4    D   D   D   D   A   E   F   E   E   E   E   A   D   D   D   A   E   E   E   D   E   E   E   F   D
  5    F   E   F   F   E   F   F   E   D   E   E   E   A   B   D   E   E   D   E   D   F   F   F   F   E
  6    F   F   F   F   F   F   F   E   C   B   B   B   B   B   B   B   C   D   E   E   E   F   E   E   D
  7    D   F   E   F   F   F   F   E   D   D   C   D   D   D   D   D   D   D   E   E   E   F   E   F   E
  8    E   E   E   E   E   E   E   D   D   C   D   D   D   D   D   D   C   D   D   E   E   F   E   E   D
  9    E   D   D   E   E   F   E   D   E   D   B   D   B   D   D   C   D   C   D   C   E   E   E   E   D
 10    F   F   F   E   E ( )   E   D   B   A   B   B   D   D   D   D   D   D   D   D   C   D   D   D   D
 11    D   E   E   E   F   F   E   D   C   E   D   C   B   B   B   B   C   D   D   F   E   E   D   D   D
 12    D   E   E   E   E   F   E   D   D   D   D   D   D   D   D   D   D   D   D   D   E   E   E   E   D
 13    E   E   E   E   E   D   D   D   D   A   B   D   B   D   D   D   D   D   C   B   D   C   C   D   D
 14    D   D   E   E   E   E   E   D   C   D   C   B   B   D   A   D   C   C   B   D   D   E   D   D   D
 15    E   F   F   E   E   E   E   D   D   A   C   B   B   B   D   B   B   D   D   D   D   A ( )   E   D
 16    F   F   F   F   F   F   F   D   C   B   B   B   B   B   D   D   D   D   D   D   D   D   D   D   D
 17    D   D   D   D   F   F   E   D   A   B   C   D ( )   D   D   D   D   D   D   D   D   D   E   E   D
 18    E   E   E   E   F   F   F   F   E   D   B   A   B   D   B   B   B   D   E   D   E   F   F   F   D
 19    F   F   E   E   F   F   F   E   B   C   D   D   D   B   C   C   C   D   D   D   E   E   E   E   D
 20    E   E   F   F   F   F   F   E   B   D   B   D   B   B   C   C   C   D   D   D   E   F   F   E   D
 21    F   F   E   D   E   F   F   E   D   D   D   D   D   D   D   D   D   D   D   D   E   E   E   E   E
 22  ( )   E   E   F   F ( )   F   D   C   E   D   A   A   B   A   D   D   D   D   E   F   F   F   F   D
 23    F   F   F   F   E   F   F   F   E   D   C   D   B   D   D   D   D   D   D   E   E   E   E   E   E
 24    F   F   F   F   E   F   F   E   D   C   D   A   C   D   B   B   B   D   D   E   E   E   E   F   D
 25    E   F   F   F   E   F   F   E   D   D   D   A   A   D   D   D   B   E   D   E   E   F   F   E   E
 26    E   E   E   E   E   E   D   D   D   D   B   B   B   B   B   B   D   D   D   B   E   E   D   E   D
 27    E   E   F   F   F   E   F   E   E   D   B   B   B   B   B   B   D   C   B   D   E   D   E   E   D
 28    E   E   E   E   E   F   F   E   E   B   A   C   E   E   D   A   D   B   D   E   E   E   E   F   D
 29  ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
 30  ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
AVE    E   E   E   E   E   F   F   E   D   C   C   C   C   C   C   C   D   D   D   D   E   E   E   E   D

TOTAL OCCURRENCES:  A= 19    B= 69    C= 36    D=204    E=173    F=104    HOURS MISSING=115

(01/06/83-HPI)
```

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	E	E	F	F	( )	E	E	B	D	C	D	D	B	D	D	B	A	A	D	D	E	E	E	D
2	D	D	D	D	D	D	E	D	E	E	D	E	E	D	D	D	C	D	E	D	D	E	E	E	D
3	E	E	E	E	E	E	E	D	D	D	C	B	D	D	E	D	D	D	E	D	D	E	E	E	D
4	( )	E	E	E	F	F	F	E	E	D	D	E	D	E	E	D	D	D	E	D	F	F	F	F	E
5	F	F	F	F	F	E	F	E	E	D	B	( )	A	A	E	E	D	E	E	E	F	F	F	F	E
6	F	F	F	F	F	F	F	D	E	E	D	D	B	C	D	D	D	C	E	C	D	E	F	F	E
7	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
8	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	E	D	D	D	D	D	D	D	E	E	( )
9	E	F	E	F	F	E	D	D	D	C	B	D	D	A	D	D	B	B	D	D	E	E	E	E	D
10	E	E	E	F	F	F	E	D	D	D	D	B	B	D	D	D	E	D	E	D	D	E	F	F	E
11	F	F	F	F	F	F	E	D	C	D	B	B	D	E	E	B	D	D	D	D	E	E	E	E	E
12	E	F	F	F	F	( )	E	D	D	E	D	E	D	A	B	D	D	D	D	D	E	E	E	E	D
13	E	E	E	E	E	E	E	E	D	D	D	D	D	D	C	A	B	B	D	E	E	E	E	E	D
14	F	F	E	E	E	E	E	D	E	E	F	E	D	E	D	D	E	D	D	D	E	F	F	( )	E
15	F	E	F	F	F	F	( )	E	D	E	E	D	D	D	D	D	E	E	D	E	F	F	F	F	E
16	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	D	D	D	D	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	D	D	E	D	E	E	E	D	D	E	E	E	F	F	F	E
18	F	F	F	F	F	F	F	E	D	D	D	A	A	D	D	E	E	E	D	E	F	D	E	F	E
19	E	F	( )	F	F	( )	E	D	D	D	B	D	D	D	D	D	B	D	D	E	F	F	E	D	D
20	F	F	F	( )	F	F	F	E	E	D	B	B	C	D	D	D	D	D	D	E	E	F	F	F	E
21	E	E	F	F	F	F	F	E	D	B	C	B	B	B	B	C	C	C	E	F	F	E	F	F	D
22	F	F	( )	F	F	F	F	E	D	B	C	B	B	C	D	D	C	D	D	D	E	( )	F	D	D
23	E	F	F	F	F	F	F	E	D	D	C	B	B	B	B	C	E	D	D	D	E	E	E	E	D
24	F	F	F	F	F	F	F	D	D	D	B	B	B	B	D	C	D	C	B	D	D	E	E	E	D
25	D	D	E	E	D	E	E	D	C	D	D	C	C	C	D	D	D	D	E	E	E	E	E	E	D
26	E	E	E	E	E	E	E	D	D	D	D	D	C	C	B	C	B	D	D	D	E	( )	E	E	D
27	E	E	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	B	D	C	E	F	F	F	E
28	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	F	F	F	( )	( )	E
29	F	F	F	F	F	F	F	E	D	D	D	D	D	D	E	E	A	D	E	E	E	E	E	F	E
30	F	F	F	F	E	E	F	D	D	C	B	B	C	D	C	B	C	C	D	F	E	F	E	E	D
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AVE	E	F	F	F	F	F	E	D	D	D	C	C	C	C	D	D	D	D	D	D	E	E	E	E	E

TOTAL OCCURRENCES: A= 10 B= 44 C= 34 D=225 E=203 F=154 HOURS MISSING= 74

(01/06/83-RPI)

```
STABILITY CLASS USING DT/DZ                                   CB-TRACT
DT 60-10M                                                     TRAILER AA23
WS 10M                                                         AUG  1981
                                                              OCCIDENTAL OIL SHALE, INC.

                                    HOUR (LOCAL STANDARD TIME)
DAY   1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  AVE

  1 ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )
  2 ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )
  3 ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )   B    B    C    B    C    D    E    F    F    F    F   ( )
  4  F    F    F    F   ( )   F    F    D    C    B    B    B    B    B    B    B    B    C    D    E    E    F    F    F    D
  5  F    F    F    F   ( )   F    F    E    D    D    B    B    C    C    B    B    C    D    D    F    F    F   ( )   F    D
  6  F    F    F    F    F    F    D    C    C    B    B    B    B    B    C    C    D    D    E    E    E    F    E    F    D
  7  F    F    F    F    F   ( )   E    B    A    A    B    B    B    B    B    B    B    C    D    E    E    E    E    E    D
  8  F    F    F    F    F    F   ( )   D    C    B    A    A    B    B    B    B    B    D    E    E    F    F    D    E    D
  9  D    E    E    F    F    F    E    D    B    B    A    B    B    B    E    D    D    C    D    E    E    E    D    D    D
 10  D    F    E    E    F    E    E    D    C    B    B    C    C    D    D    D    D    D    E    E    E    E    E    F    D
 11  F    E    E    E    E    E    E    D    D    C    C    D   ( )   D    D    D    D    D    D    E    F    F    E    E    E
 12  E    E    E    E    F    F    F   ( )   D    D    D    A    B    D    D    C    E   ( )   E    E    E    E    F    F    E
 13  F    F    F    F    F    E    E    E    E    E    E    D    D    E    D    D    D    D    D    D    E    E    F    E    E
 14  E    E    E    E    E    E    E    E    E    D    A    E    E    E    E    E    D    D   ( )   E    E    F    F    F    E
 15  E    E    E    E    F    F    F    F    E    D    D    A    C    D    E    E    D    D    D    E    E    E    F    F    E
 16  E    F    F    F   ( )  ( )   E    E    E    E    D    D    E    D    E    D    D    D    D    E    F    F    E    F    E
 17  F    F    F    E    E   ( )   F    E    E    E    E    E    E    D    E    E    E    D    D    D    E    E    E    E    E
 18  F    F    F    F    F    F    E    E    E    E    C    D    B    B    C    D    D    D    B    E    F    F    F    E    E
 19  F    F    F    F    F    F    F    E    E    D    D    A    C    E    E    D    D    D    D    E    F    F    E    E    E
 20  E    E    E    E    F    E    E    F    E    D    B    E    D    D    D    D    C    C    D    E    E    F    F    F    E
 21  F    F    F    F    F    F    F    F    D    D    B    D    C    D    E    D    E    D    E    E    E    E    F    F    E
 22  E    F    F    E    E    E    E    E    D    B    A    B    B    B    B    C    D    D    D    E    F    F    E    E    D
 23  E    E    F    F    F    F   ( )   F    D    B    A    D    E    D    D    D    D    D    D    D    E    E    E    F    E
 24  F    F    E    F    F    F    F    F    E    E    E   ( )  ( )   D    E    D    D    E    E    E    E    F    F    F    E
 25  F    F    F    F    F    F    F    F    E    F    E    D    E    D    D    D    D    A    E    E    F    E    F    F    E
 26 ( )   F    F   ( )   F    F    F    F    E    E    D    D    D    E    D    D    D    D    D    D    E    E    F    F    E
 27  F    F    F    E    E    F    F    E    E    F    E    E    E    D    E    D    D    D    E    E    E    F    F    F    E
 28  E    F    F    E    E    E    E    F    E    E    E    D    E    D    D    D    D    C    E    F    E    E    D    E    E
 29  F    F    E    E    E    E    E    D    D    D    D    D    D    D    E    D    D    D    E    E    F    F    E    E    E
 30  E    E    E    D    D    D    E    E    E    D    D    D    D    D    D    D    D    E    E    E    E    D    E    E    E
 31  E    E    E    F    F    F    F    E    E    E    D    D    B    B    D    D    D    D    D    E    E    E    E    E    E
AVE  E    F    F    F    F    F    E    E    D    D    C    C    C    C    D    D    D    D    D    E    E    E    E    F    E

 TOTAL OCCURRENCES:  A= 12     B= 55     C= 29     D=161     E=232     F=177     HOURS MISSING= 78

 (01/06/83-RPI)
```

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	F	F	F	F	F	F	F	E	D	B	C	C	B	B	B	B	C	E	E	E	E	E	E	D
2	E	E	E	E	E	E	E	E	D	E	D	B	B	C	D	C	A	B	B	C	D	C	E	E	D
3	E	E	E	E	E	E	F	E	D	D	D	E	C	B	C	E	E	D	E	F	F	( )	F	F	E
4	F	F	F	F	F	F	F	E	E	D	D	C	B	B	B	B	B	C	E	E	D	D	D	D	D
5	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	C	D	D	D	D	D	D	D	D	D
6	D	D	D	D	D	( )	D	D	D	D	D	D	A	D	B	D	C	D	E	E	E	D	E	E	D
7	D	D	D	D	D	D	D	D	D	D	E	D	E	E	C	D	D	E	E	E	E	F	F	F	E
8	F	F	E	E	E	E	F	F	E	E	E	E	C	E	D	D	D	C	C	E	E	E	E	E	E
9	F	F	F	E	E	E	E	E	D	E	( )	A	D	D	B	D	E	E	E	F	E	D	E	E	E
10	F	E	E	E	E	F	E	E	E	E	D	E	A	E	D	D	E	E	E	F	E	E	F	F	E
11	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	D	E	E	F	E	E	E	( )
12	F	E	E	F	F	F	F	F	E	D	E	D	D	D	B	B	C	E	E	F	F	E	E	E	E
13	E	F	F	F	F	F	( )	E	E	E	E	E	E	D	D	E	E	E	E	E	E	F	F	E	E
14	F	F	F	E	E	E	F	F	F	( )	E	D	E	D	E	E	E	E	E	E	E	F	E	E	E
15	F	F	F	F	E	E	F	( )	E	E	E	E	D	E	E	E	D	D	D	E	A	E	E	F	E
16	F	F	F	E	F	E	F	E	E	D	E	D	E	E	E	D	B	C	D	A	E	E	C	E	E
17	D	C	E	E	( )	D	E	F	E	E	E	E	E	E	E	D	D	D	B	A	B	E	E	F	D
18	E	F	F	F	E	F	( )	F	F	F	E	E	E	E	E	E	D	D	E	E	F	F	F	F	E
19	F	F	F	F	F	E	E	F	E	E	E	D	D	E	E	E	B	E	E	E	E	E	E	F	E
20	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	C	D	E	E	F	F	E	( )
21	D	E	E	E	E	F	F	F	E	E	B	D	D	D	D	D	B	B	E	E	F	F	E	F	E
22	E	E	E	F	E	F	F	F	D	D	E	D	D	D	D	C	D	D	E	F	F	F	F	F	E
23	E	F	F	F	E	E	E	E	E	E	D	D	B	B	D	D	D	D	E	D	E	E	E	D	E
24	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	E	E	E	E	E	E	E	E	E	E	( )
25	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E	E
26	E	E	E	E	E	F	E	E	E	E	E	E	D	D	D	E	D	D	E	E	( )	F	F	F	E
27	F	F	F	F	F	F	F	F	E	E	E	E	E	E	E	E	D	D	E	E	E	E	E	E	E
28	E	E	E	D	E	F	F	F	E	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E	E
29	F	E	E	E	D	D	D	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E	E	E
30	E	E	E	F	E	D	D	D	D	D	E	E	E	D	E	D	C	B	A	D	E	E	E	E	D
AVE	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 8 B= 30 C= 24 D=177 E=297 F=132 HOURS MISSING= 52

(01/06/83-HPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	E	F	F	E	E	( )	( )	F	E	E	E	D	D	E	D	D	D	F	F	D	E	D	E	E
2	F	F	E	E	D	D	D	B	B	D	D	D	D	D	B	D	D	D	E	E	E	E	D	D	D
3	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
4	D	B	D	D	D	D	D	D	B	B	D	E	B	B	D	D	D	D	D	D	D	D	D	D	D
5	E	F	E	E	E	E	D	E	E	D	E	E	D	D	D	D	D	E	E	E	F	F	F	F	E
6	E	E	E	F	F	F	F	F	F	F	E	B	D	E	E	E	E	E	F	F	E	E	E	F	E
7	F	F	D	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	E	D	D	E	E	E
8	D	D	D	C	E	E	D	D	( )	D	D	D	B	D	E	D	D	D	D	D	D	D	D	D	D
9	D	D	D	E	E	E	D	E	E	E	D	E	E	D	D	D	D	E	E	E	F	F	F	F	E
10	F	F	F	E	E	E	E	E	E	D	D	D	D	E	D	D	D	D	D	D	E	E	D	C	E
11	D	D	C	D	D	D	D	D	D	D	D	D	D	D	D	C	D	E	E	E	E	D	D	E	D
12	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	D	D	C	D	D
13	D	E	F	F	E	E	E	F	E	D	D	C	D	D	D	D	D	D	E	E	E	D	D	D	E
14	D	D	D	D	E	D	D	E	E	D	B	D	D	C	B	B	D	D	D	D	E	E	( )	E	D
15	E	E	D	E	E	D	E	E	E	D	E	E	E	D	D	E	D	D	D	D	D	D	E	D	E
16	E	D	D	D	D	E	D	E	D	D	D	D	D	C	B	C	C	D	D	D	D	D	E	E	D
17	E	D	D	D	E	E	E	E	E	D	A	D	E	E	E	E	D	C	D	E	E	E	E	D	D
18	E	E	E	E	E	F	F	E	E	E	E	E	D	F	E	D	D	B	D	D	E	E	E	F	E
19	F	E	E	F	( )	F	F	F	F	F	E	F	E	E	E	D	C	E	E	F	E	F	F	F	E
20	F	F	F	F	F	F	F	F	E	D	B	B	D	D	D	D	C	D	E	E	E	F	F	F	E
21	E	E	D	E	E	F	E	( )	E	F	E	E	E	E	E	D	D	D	E	E	E	E	E	( )	E
22	E	F	E	E	E	F	E	F	E	E	D	D	D	E	E	D	C	A	C	E	F	F	F	( )	E
23	E	D	F	F	F	F	F	F	F	E	D	B	B	E	E	D	D	D	E	E	E	F	F	E	E
24	E	E	E	E	F	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
25	D	D	C	C	D	D	D	E	E	F	E	A	A	E	D	A	B	D	E	E	E	E	F	E	D
26	E	E	F	F	F	F	F	F	E	D	D	D	D	D	D	C	D	D	E	E	F	F	E	E	E
27	E	E	F	E	E	E	E	E	D	D	D	C	D	D	D	D	D	D	E	E	E	D	D	E	E
28	E	E	E	E	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
29	D	D	E	F	E	E	E	D	D	D	D	D	B	D	C	D	B	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	D	D	E	E	E	E	( )
31	E	F	F	F	F	F	F	F	F	E	D	E	E	E	( )	D	( )	( )	E	E	F	F	F	E	E
AVE	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 5 B= 22 C= 20 D=308 E=253 F=103 HOURS MISSING= 33

(01/06/83-RPI)

```
STABILITY CLASS USING DT/DZ                                                   CB-TRACT
DT 60-10M                                                                     TRAILER AA23
WS 10M                                                                         NOV  1981
                                                                              OCCIDENTAL OIL SHALE, INC.

                                              HOUR (LOCAL STANDARD TIME)
  DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  AVE

    1   E   F   F  ( )  F   F   F   E  ( )  D   D   D   D   D   D   D   D   E   E   E   E   F   F   F   E
    2   E   E   E   F   F   E   F   F  ( )  D   D   D   D   D   D   D   D   E   E   E   F   F   F   E   E
    3   F   F   E   F   F   E   E   E   E   D   D  ( )  C   D   D   D   D   E   E   E   F   F   F   F   E
    4   F   F   F   F   F   F   F   F   F   D   E   D   D   D   D   D   D   E   E   F   F   F   F   F   E
    5   F   F   F   F   F   F   F   F   F   E   D   C   D   D   D   D   E   F   F   F   F   F   F   F   E
    6   F  ( )  F   E   F   F   F   F   F  ( )  D   C   C   D   C   D   D   D   E   E   D   E   E   D   E
    7   E   E   D   E   E   E   E   E   D   C   B   B   B   B   B   C   E   E   E   E   E   E   E   E   D
    8   F   F   E   E   E   E   E   E   E   D   A   B   B   B   B   B   D   E   E   E   E   F   E   E   D
    9   F   F   E   E   F   F   F   F   F   D   D   C   B   D   D   D   D   E   E   F   F   F   F   F   E
   10   F   F   F   F   F   F   F   F   E   D   C   D   C   C   D   D   D   E   E   F   E   F   F   F   E
   11   F   F   F   F   F   F   F   F   E   D   D   B   B   C   C   D   D   E   F   F   F   F   F   F   E
   12   F   E   F   F   E   F   F   F   E   D   C   B   B   B   B   C   D   E   E   E   E   E   E   F   E
   13   E   F   F   E   F   E   E   D   D   D   D   D   C   D   C   C   D   E   D   E   E   E   E   D   E
   14   D   D   D   D   D   D   D   D   D   D   D   D   D   D   D   D   D   E   E   E   E   E   E   E   D
   15   E   E   E   E   E   E   E   E   E   D   B   C   C   C   C   D   D   D   E   E   E   D   F   F   D
   16   A   F   F   E   E   F   F   F   D   D   C   B   B   C   D   C   D   E   E   E   E   F   F   E   D
   17   D   E   E   D   F   F   E   E   D   C   C   D   C   C   D   D   D   D   D   D   D   D   D   D   D
   18   D   D   B   A   D   D   E   E   D   D   D   D   D   D   D   D   D   D   D   D   D   D   E   E   D
   19   E   E   E   F   E   F   F   F   F   F   D   D   D   D   D   D   D   E   E   E   E   E   F   F   E
   20   F   F   F   F   F   F   F   E   E   D   D   D   D   D   D   D   D   D   D   D   D   E   E   F   E
   21   F   F   E   E   E   F   E  ( )  E   D   C   D   D   D   D   D   D   E   E   E   E   E   E   E   E
   22   E   E   E   D   D   D   D   D   D   D   C   C   C   D   C   D   D   D   D   D   D   D   D   D   D
   23   D   D   D   D   E   F   E   E   D   D   C   D   D   C   D   D   D   D   E   D   D   E   E   E   D
   24   D   D   D   D   D   D   E   D   D   D   D   D   D   D   D   D   D   D   D   D   D   E   E   E   D
   25   E   E   E   E   E   E   E   E   B   B   C   C   C   C   D   C   C   D   D   E   E   E   E   F   D
   26   E   F   E   E   F   F   F   F  ( )  E   D   D   D   D   D   D   D   E   E   F   E   E   E   F   E
   27   F   F   E   E   E   E   E   E   E   D   D   D   D   D   C   D   D   D   D   D   E   E   E   F   E
   28   E   F   F   E   E   E   F   E  ( )  E   D   D   D   D   D   D   D   D   E   D   E   E   F   E   E
   29   E   E   E   E   E   F   E  ( )  E   D  ( )  D   C   C   C   C   D  ( )  D   D   D   D   D   D   D
   30   E   E   E   E   E   F   E   F   E   D   D   C   D   D   D   D   D   D   D   D   D   E   D   D   D
  AVE   E   E   E   E   E   E   E   E   E   D   D   C   C   D   D   D   D   E   E   E   E   E   E   E   E

 TOTAL OCCURRENCES:  A=  3     B= 23     C= 48     D=257     E=217     F=160     HOURS MISSING= 12
 (01/06/83-RPI)
```

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	E	E	F	F	( )	E	E	D	D	C	D	C	D	C	C	D	D	D	E	E	E	E	E	D
2	E	E	E	E	E	E	D	D	D	C	C	C	D	D	D	D	D	D	D	D	E	E	E	D	D
3	D	E	E	E	E	E	F	F	E	D	D	D	D	D	D	D	D	E	F	F	F	F	F	E	E
4	( )	F	E	F	F	F	F	F	F	E	D	D	D	D	D	D	D	E	E	E	E	E	( )	E	E
5	E	E	E	D	D	D	E	E	E	D	D	D	D	D	D	D	E	E	F	E	E	E	F	F	E
6	F	E	F	F	F	F	F	F	E	D	C	D	C	D	D	D	D	E	E	E	F	E	E	F	E
7	E	F	F	F	F	F	E	F	F	E	D	D	D	D	D	D	E	F	F	F	F	F	F	F	E
8	F	E	F	E	F	F	( )	F	F	E	( )	C	C	D	D	D	D	F	F	F	F	F	E	F	E
9	F	F	F	F	E	F	F	F	F	D	C	B	C	D	D	D	E	E	E	F	F	F	F	F	E
10	D	D	D	E	E	E	E	E	E	D	D	D	B	C	C	D	E	E	E	F	E	F	E	E	E
11	E	E	D	D	E	E	F	E	E	B	B	A	B	B	D	D	D	D	E	E	E	E	E	E	D
12	F	E	F	E	E	( )	E	E	D	C	B	B	B	B	C	D	D	E	D	D	D	D	E	D	D
13	E	D	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	D
14	F	E	E	E	E	E	D	D	D	D	D	D	C	D	C	D	D	D	E	E	D	D	E	D	D
15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	B	D	E	E	D
16	E	F	E	E	F	F	F	E	E	E	E	D	C	D	D	D	D	D	( )	D	E	D	D	D	E
17	D	D	D	E	D	E	D	D	D	D	A	B	D	D	D	D	D	E	F	F	F	F	F	F	D
18	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	E	E	E	E	E	E	E	D	E
19	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D
20	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
21	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D	E	D	D
22	D	D	D	D	D	D	D	E	E	E	( )	D	D	D	C	D	D	D	C	D	D	D	E	E	D
23	E	F	F	F	F	F	F	F	F	E	E	C	C	D	B	C	D	E	E	F	F	F	F	F	E
24	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
25	D	D	D	E	E	E	D	D	D	D	D	C	C	C	D	C	D	E	D	D	D	E	E	E	D
26	D	D	D	E	E	E	E	E	E	D	C	C	C	C	C	C	C	D	D	C	D	D	D	D	D
27	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	D
28	E	E	E	E	F	F	F	E	E	E	E	D	C	D	C	C	D	D	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	E	D
31	E	D	E	E	E	E	E	F	E	E	E	D	D	D	D	D	C	D	D	E	E	E	E	F	E
AVE	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	E	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 2 B= 13 C= 41 D=351 E=212 F=117 HOURS MISSING= 8

(01/06/83-RPI)

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A        CB-TRACT
WD IN DEGREES AT 10M                                              TRAILER AA23
WS IN MPS AT 10M                                                   JAN  1981
                                                                  OCCIDENTAL OIL SHALE, INC.

                                      HOUR (LOCAL STANDARD TIME)

  DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

    1
    2
    3
    4
    5                                                              2
                                                                  NW
    6
    7
    8
    9
   10
   11
   12
   13
   14
   15
   16                                              1   2       2
                                                 NNW  NW     WNW
   17
   18
   19
   20
   21
   22
   23
   24
   25                                          2   1
                                             NNW NNW
   26
   27
   28
   29
   30
   31

  (01/06/83-RPI)
```

```
        HOUR  WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                        CB-TRACT
        WD IN DEGREES AT 10M                                                            TRAILER AA23
        WS IN MPS AT 10M                                                                 FEB  1981
                                                                                        OCCIDENTAL OIL SHALE, INC.

                                                  HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3
  4
  5
  6
  7
  8
  9
 10                                                           2
                                                             NW
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21                                                                               2
                                                                                 NW
 22
 23
 24
 25
 26
 27
 28

 (01/06/83-WPI)
```

```
HOU    WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                      CB-TRACT
WD IN DEGREES AT 10M                                                           TRAILER AA23
WS IN MPS AT 10M                                                                MAR  1981
                                                                               OCCIDENTAL OIL SHALE, INC.

                                         HOUR (LOCAL STANDARD TIME)
DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31

 (01/06/83-HPI)
```

```
HOUR  WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                  CB-TRACT
WD IN DEGREES AT 10M                                                       TRAILER AA23
WS IN MPS AT 10M                                                            APR  1981
                                                                           OCCIDENTAL OIL SHALE, INC.

                                             HOUR (LOCAL STANDARD TIME)

DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22                                               2
 23                                             NNW
 24                                           1
 25                                         WNW
 26
 27
 28
 29
 30
```

```
HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                 CB-TRACT
WD IN DEGREES AT 10M                                                     TRAILER AA23
WS IN MPS AT 10M                                                          MAY  1981
                                                                         OCCIDENTAL OIL SHALE, INC.

                                                  HOUR (LOCAL STANDARD TIME)
DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3
                                                                                  1
                                                                                  W
  4
                                                                                       1
                                                                                     ESE
  5
                                                                   1
                                                                 SSW
  6
  7
  8
  9
 10
                                                              1
                                                            WNW
 11
                                                                                                      2
                                                                                                    NNE
 12
 13
                                                                        1
                                                                      NNW
 14
 15
 16
 17
 18
                                                                                  1
                                                                                SSE
 19
 20
 21
 22
 23
                                               2
                                              NW
 24
 25
 26
                                               1    1
                                             ESE   SW
 27
 28
                                                              1
                                                              N
 29
 30
                                                              1    0    1         1
                                                              W    S   SW        NW
 31
                                                              2
                                                            ESE
```

```
        HO     WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                       CB-TRACT
        WD    DEGREES AT 10M                                                             TRAILER AA23
        WS IN MPS AT 10M                                                                 JUNE  1981
                                                                                         OCCIDENTAL OIL SHALE, INC.

                                                  HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3
  4                        1                                  2                   1
                          SW                                 NW                 NNW
  5                                                                1
                                                                 NNW
  6
  7
  8
  9
 10                                                 1
                                                    W
 11
 12
 13                                                 1
                                                   NW
 14                                                                          1
                                                                           WNW
 15                                                 2                                                           2
                                                   NW                                                          SW
 16
 17                                            1
                                              NW
 18                                                           1
                                                             SW
 19
 20
 21
 22                                                           1    2         2
                                                            SSW  WSW         W
 23
 24                                                           1
                                                            NNW
 25                                                           1    2
                                                             NW    N
 26
 27
 28                                                      2                        1
                                                        SW                       SW
 29
 30

     /06/83-RPI)
```

HOURL IND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
RAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																		2 NW	1 W					
2																								
3																								
4																								
5													2 WSW	1 W										
6																								
7																								
8																								
9														1 ESE										
10																								
11																								
12														2 WSW										
13																1 SW								
14																								
15																								
16																								
17																								
18												0 W	1 SW											
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																	0 W							
30																								
31																								

/06/83-HPI)

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                    CB-TRACT
WD IN DEGREES AT 10M                                                         TRAILER AA23
WS IN MPS AT 10M                                                              AUG  1981
                                                                             OCCIDENTAL OIL SHALE, INC.

                                               HOUR (LOCAL STANDARD TIME)

DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1

  2

  3

  4

  5

  6

  7                                   1   2
                                    WNW  NW
  8                                           2   1
                                            NNW NNW
  9                                           2
                                            NNW
 10

 11

 12                                               2
                                                 NW
 13

 14                                           2
                                            NNW
 15                                               1
                                                 SE
 16

 17

 18

 19                                               0
                                                 NW
 20

 21

 22                                           1
                                            WSW
 23                                           2
                                             SW
 24

 25                                                                       1
                                                                        ESE
 26

 27

 28

 29

 30

 31

(01/06/83-RPI)
```

```
      HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A       CB-TRACT
      WD IN DEGREES AT 10M                                            TRAILER AA23
      WS IN MPS AT 10M                                                SEPT  1981
                                                                      OCCIDENTAL OIL SHALE, INC.

                                         HOUR (LOCAL STANDARD TIME)
DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1
  2                                                                     1
                                                                      WNW
  3
  4
  5
  6                                                     1
                                                       NW
  7
  8
  9                                                 1
                                                   SW
 10                                                     1
                                                        E
 11
 12
 13
 14
 15                                                                                     2
                                                                                       SW
 16                                                                                 1
                                                                                   NE
 17                                                                                 1
                                                                                  WSW
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30                                                                             2
                                                                               NE

/06/83-RPI)
```

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB Y CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17											0 SSW													
18																								
19																								
20																								
21																								
22																		1 N						
23																								
24																								
25												1 SSW	1 SW			1 SW								
26																								
27																								
28																								
29																								
30																								
31																								

(01/06/83-RPI)

```
HOU   WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A                 CB-TRACT
WD IN DEGREES AT 10M                                                     TRAILER AA23
WS IN MPS AT 10M                                                          NOV  1981
                                                                         OCCIDENTAL OIL SHALE, INC.

                                        HOUR (LOCAL STANDARD TIME)
DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1
  2
  3
  4
  5
  6
  7
  8                                          1
  9                                         NW
 10
 11
 12
 13
 14
 15
 16    2
     ESE
 17
 18               1
                 NE
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
```

06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABI Y CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11												1 W												
12																								
13																								
14																								
15																								
16																								
17											0 NE													
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								

(01/06/83-RPI)

```
HOU   WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B                  CB-TRACT
WD IN DEGREES AT 10M                                                      TRAILER AA23
WS IN MPS AT 10M                                                           JAN  1981
                                                                          OCCIDENTAL OIL SHALE, INC.

                                                 HOUR (LOCAL STANDARD TIME)
 DAY     1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

   1
   2                                                                     3     3
                                                                        SW   WSW
   3                                                                     2     4     4
                                                                       WNW   WSW   SSW
   4                                                                                 4     4
                                                                                    SW   SSW
   5                                                                           3     2
                                                                              NW   WNW
   6
   7
   8
   9
  10
  11
  12
  13                                                                     2
                                                                       WNW
  14
  15
  16                                                         1                 2
                                                             W                NW
  17
  18                                                                           3     2
                                                                              NW    NW
  19
  20                                                               2     3     4
                                                                 WNW    NW   NNW
  21                                                                                 3
                                                                                    NW
  22
  23
  24                                                         4                       4
                                                            SW                       W
  25                                                         1                 1     1     1     2
                                                            NW               NNW    NW   NNW   NNW
  26                                                         0     1                 3     2     3
                                                             S     N                 W   WSW   SSW
  27                                                               3     3     4     4     4
                                                                  SW    SW    SW   SSW    SW
  28                                                                                       5
                                                                                           S
  29                                                               5           4     5     4     4
                                                                  SW          SW    SW   SSW   SSW
  30
  31                                                               1
                                                                 WNW

|/06/83-HPI)
```

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																4 SW								
3																								
4																								
5																4 SW								
6												4 WSW	4 W											
7														3 W										
8																								
9										4 SW	4 SW	4 SW	4 SW	4 WSW	4 WSW									
10			4 NW	2 NNW	3 NW				4 WNW	4 NW	2 NW		3 NW	4 NNW	3 NNW	2 NNW	1 NE							
11																	5 SSW							
12																								
13																4 SSW								
14													4 SW											
15																								
16												1 WSW		3 S										
17													3 WSW											
18														4 SW	3 SW									
19												4 SSW	4 SW											
20															3 N									
21											3 N	2 N	1 N	2 NNW	2 NNW		1 N							
22													1 NNE		2 NW	3 N								
23											4 SW	2 SW	2 SW	3 SW	4 SSW	4 SSW								
24																								
25										5 SSW														
26																5 S	2 SW							
27																								
28											4 SW	4 SW	4 SW	3 SW										

(01/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1												3 SSW				2 NNW								
2											4 S	5 SSE	4 SSE	4 S										
3																								
4										4 NNW	4 NNW	4 NNW	4 NNW	4 NNW	3 NNW									
5											4 SSW		3 WSW	3 SW	2 SW	1 SW								
6															2 WSW		2 SW							
7																								
8																								
9																								
10																								
11																								
12										1 SSW														
13														4 WSW	4 WSW									
14												2 NW	3 NW		2 N									
15													2 N											
16										4 SSW														
17																								
18																								
19													4 SSW		5 SW									
20										4 SW	4 SSW					4 SSW								
21																								
22																								
23												2 NNW		1 NNW										
24										4 NW														
25												3 WSW	4 WSW	4 SW	4 S									
26																								
27		3 WSW														5 S	5 SSW	4 SSW						
28																								
29													5 SW	4 SW	5 SSW									
30						4 WNW	4 WNW	4 W						3 NNE										
31																								

HOUR, WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3									4 W															
4																								
5																								
6																								
7													4 NNW	4 NNW	2 NNW									
8										3 SW	4 W	3 WSW	3 WSW	4 WSW	5 SW	3 SW	4 SW							
9																								
10										5 SW														
11																								
12									4 SSW	5 SSW														
13									1 WSW		1 NW	3 NW	1 N											
14												2 WSW	2 WSW			2 WNW								
15										4 SW	5 SSW	4 SW												
16											4 SW	4 WSW	4 WSW			4 WNW								
17										4 SW	5 SW	4 WSW	4 SW	4 SW	4 SW	4 WSW	3 SW							
18															5 NW									
19																		4 SW						
20																								
21									5 WSW								4 WSW							
22										2 NNW	2 NNW		3 NNW	3 NNE	3 N	2 N	2 NNW							
23											2 NNW	3 NNW	3 NW	1 NNE	1 NNE	2 N	2 N							
24													2 NNW	3 NW	2 N									
25										4 SW	5 SW													
26									5 SSW															
27											2 N	3 SW					5 WSW							
28								2 WNW			2 N	3 NW	2 NNW	3 NW	2 NW	3 NNW	3 NNW							
29											0 WSW				4 NW	3 NNW	4 N							
30												2 NNW	3 NNW	2 NNW		3 N								

/06/83-RPI)

```
HOUR  IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B              CB-TRACT
WD IN DEGREES AT 10M                                                 TRAILER AA23
WS IN MPS AT 10M                                                      MAY  1981
                                                                     OCCIDENTAL OIL SHALE, INC.

                                                    HOUR (LOCAL STANDARD TIME)

DAY      1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1                                                   2
                                                     NW
  2                                                                  3
                                                                   SSW
  3
  4
  5
  6
  7                                                              3         4    4         4
                                                               NW         W  WSW       WSW
  8                                                        4                                  0
                                                         NNW                                WSW
  9                                                                                 1
                                                                                  NNW
 10                                              3    2    3                        1
                                               WSW    W    W                      SSW
 11                                                        3    4    4
                                                         WSW  WSW  WSW
 12                                                                       4
                                                                          W
 13                                                                  2
                                                                    NW
 14                                                   5         4
                                                     SW        SW
 15                                                                                 5
                                                                                   SW
 16                                                   3    3    3    4         4    4    4
                                                     SW   SW   SW   SW       WSW   SW   NW
 17                                                                                      3
                                                                                       NNW
 18                                                                            1
                                                                              SE
 19
 20
 21
 22                                         3    4    4    4    4
                                          WSW  WNW   NW  WNW  WNW
 23                                                                                                     1
                                                                                                       NE
 24
 25
 26                                                             5
                                                              SSW
 27                                                                            5    4    4
                                                                              SW   SW  WSW
 28
 29
 30                                                        2
                                                         WNW
 31
```

/06/83-RPI)

```
HO   WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B                  CB-TRACT
WD   DEGREES AT 10M                                                       TRAILER AA23
WS IN MPS AT 10M                                                          JUNE  1981
                                                                          OCCIDENTAL OIL SHALE, INC.

                                          HOUR (LOCAL STANDARD TIME)

DAY       1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

  1

  2

  3                                                                                                                   1     2
                                                                                                                    WNW     E
  4

  5                                                                                     1
                                                                                       NW
  6                                                              5     4     4     4     4     4     5
                                                               SW    SW    SW   WSW    SW    SW    SW
  7

  8

  9                                                                    3           4
                                                                    WNW         NNW
 10                                                        1           4     5
                                                          E          SW    SW
 11                                                                                4     5     5     5
                                                                                WSW    SW    SW    SW
 12

 13                                                                    2           4                                         5
                                                                     NW         WSW                                       NNW
 14                                                                          3     3                                   3
                                                                          NNW   NNW                                 WNW
 15                                                                          3     2     2           2     2
                                                                          NNW     N   NNW         NNW    NW
 16                                                              5     4     4     4     5
                                                               SW    SW    SW   SSW   SSW
 17                                                              2
                                                              WNW
 18                                                                    2           4           3     4     3
                                                                     SE         WNW           W     W    SW
 19                                                        1                             5
                                                         NW                              W
 20                                                        4           4           4     4
                                                          W           W           W   WSW
 21

 22                                                                                      2
                                                                                         W
 23                                                                                2
                                                                                WSW
 24                                                                                            4     4     4
                                                                                             NW   NNW   NNW
 25                                                                                                        3
                                                                                                           N
 26                                                                    5     4     3     4     3     3                       2
                                                                     SW   WSW     W     W   WSW   WNW                     ESE
 27                                                                    4     3     4     4     4     5                 4
                                                                     SW    SW    SW   SSW    NW   NNW               WNW
 28                                                              2                                               3
                                                              WSW                                             WNW
 29

 30

    /06/83-RPI)
```

```
HOU    IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B          CB-TRACT
WD I   GREES AT 10M                                                TRAILER AA23
WS IN MPS AT 10M                                                   JULY  1981
                                                                   OCCIDENTAL OIL SHALE, INC.

                                      HOUR (LOCAL STANDARD TIME)

DAY     1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

 1                                              1                        3              2
                                              NNW                      NNW             NW
 2
 3                                                           2
                                                            NW
 4
 5                                                      2
                                                        E
 6                                                                4
                                                                WSW
 7
 8
 9                                                      1                                   4    3
                                                        W                                  NW   NW
10                                                           4    4
                                                            SW   SW
11                                                      2    4                   5
                                                        W  NNW                 NNW
12                                                                          3
                                                                          WSW
13                                                                                    3    2
                                                                                     SW   SW
14
15
16
17
18
19                                                      4                                4
                                                        W                              WNW
20                                                      5    4
                                                       SW   SW
21                                                 4         4    3    2    4
                                                  SW        SW    W   SW  WSW
22                                                 4         4    4
                                                  SW       WSW    W
23                                                           4    4    4    4
                                                           SSW  SSW   SW   SW
24                                                      3    3    4    5                        2
                                                       SW   SW  SSW  SSW                       NW
25
26                                                                          3         3
                                                                           NW        NE
27                                                                                         4
                                                                                         NNW
28
29
30                                                      4    4              5
                                                      SSW   SW            WSW
31

/06/83-RPI)
```

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABI    CLASS B          CB-TRACT
WD IN DEGREES AT 10M                                               TRAILER AA23
WS IN MPS AT 10M                                                    AUG  1981
                                                                   OCCIDENTAL OIL SHALE, INC.

                                     HOUR (LOCAL STANDARD TIME)
DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3                                                                  4    4         4
                                                                   SSW  WSW        SW
  4                                                 4    5    4    4    4    4    4    4
                                                   SW   SW  WSW   SW   SW  WSW  WSW  WSW
  5                                                      2    2              4    3
                                                       NNW  WSW              W    W
  6                                                 2    2    2    3    3
                                                   NW  WNW   NW  NNE    N
  7                                       1              2    3    4    4    4    4    4
                                        WNW            NNW  NNW   NW  NNW  NNW  NNW  NNW
  8                                                 1              3    3    4    4    2
                                                  WNW            NNW   NW    N  NNW   NW
  9                                            3    3         3    3    4
                                              NW   NW        NW   NW  NNW
 10                                                 2    3
                                                   NW   NW
 11
 12                                                                3
                                                                  NW
 13
 14
 15
 16
 17
 18                                                                2    2                        3
                                                                 NNW  SSW                       SW
 19
 20                                                      2
                                                       NNW
 21                                                      5
                                                       NNW
 22                                                 1         2    2    3    3
                                                  WSW       SSW  SSW   SW  WSW
 23                                                 2
                                                   SW
 24
 25
 26
 27
 28
 29
 30
 31                                                                4    5
                                                                  SW  WSW

(01/06/83-RPI)
```

HC WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1											5 SW			4 SW	4 WSW	3 WSW	4 SW							
2												4 SW	4 SW					4 NE	4 NNE					
3														4 SW										
4													5 SW	5 SW	5 SW	4 SW	4 SW							
5																								
6															2 W									
7																								
8																								
9															2 N									
10																								
11																	1 NW							
12															3 SW	4 WSW								
13																								
14																								
15																								
16																	5 NNW							
17																			2 NE		2 SW			
18																								
19																	3 SE							
20																								
21											3 SW						2 NNW	2 SW						
22																								
23													2 WNW	2 WNW										
24																								
25																								
26																								
27																								
28																								
29																								
30																		3 N						

/06/83-HPI)

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABI     CLASS B                           CB-TRACT
WD IN DEGREES AT 10M                                                                  TRAILER AA23
WS IN MPS AT 10M                                                                       OCT  1981
                                                                                      OCCIDENTAL OIL SHALE, INC.

                                                  HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2                                        3    4                        4
                                         SSW  SSW                       SW
  3
  4         5                                   3    2              4    3
          SSW                                  SW  SSW            SSW    S
  5
  6                                                       3
                                                          W
  7
  8                                                            4
                                                              SW
  9
 10
 11
 12
 13
 14                                                  4                   4    3
                                                    SW                 WSW    W
 15
 16                                                                      5
                                                                        SW
 17
 18                                                                                     2
                                                                                      NNW
 19
 20                                                  3    3
                                                    SW  SSW
 21
 22
 23                                                       2    2
                                                         SW  WSW
 24
 25                                                                                3
                                                                                  SW
 26
 27
 28
 29                                                            4                   4
                                                             WSW                 WNW
 30
 31

(01/06/83-RP1)
```

```
HOUR   WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B                 CB-TRACT
WD IN DEGREES AT 10M                                                        TRAILER AA23
WS IN MPS AT 10M                                                             NOV  1981
                                                                            OCCIDENTAL OIL SHALE, INC.

                                         HOUR (LOCAL STANDARD TIME)
DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3
  4
  5
  6
  7                                                      2    2    3    3    3
                                                        NW   NW  NNW  NNW  NNW
  8                                                           1    2    2    2    2
                                                             NW   NW   NW   NW   NW
  9                                                                2
                                                                   N
 10
 11                                                           1    1
                                                              N  NNW
 12                                                           4    4    4    4
                                                            SSW   SW   SW   SW
 13
 14
 15                                                      4
                                                        SW
 16                                                           4    5
                                                             SW  SSW
 17
 18                 4
                  WNW
 19
 20
 21
 22
 23
 24
 25                                            4    4
                                             WNW  WNW
 26
 27
 28
 29
 30

(06/83-RPI)
```

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STAB   Y CLASS B          CB-TRACT
WD IN DEGREES AT 10M                                               TRAILER AA23
WS IN MPS AT 10M                                                    DEC  1981
                                                                   OCCIDENTAL OIL SHALE, INC.

                                              HOUR (LOCAL STANDARD TIME)

DAY      1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

   1
   2
   3
   4
   5
   6
   7
   8
   9                                                           4
                                                              SW
  10                                                                4
                                                                   SW
  11                                                      1    0         4    4
                                                          E    E         W   NW
  12                                                           4    4    4    4
                                                              SW  SSW  SSW   SW
  13
  14
  15                                                                                                        2
                                                                                                            N
  16
  17                                                               0
                                                                 ENE
  18
  19
  20
  21
  22
  23                                                                                2
                                                                                  NNW
  24
  25
  26
  27
  28
  29
  30
  31

(01/06/83-RPI)
```

```
HO(  ) WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C                CB-TRACT
WD I. DEGREES AT 10M                                                     TRAILER AA23
WS IN MPS AT 10M                                                          JAN  1981
                                                                         OCCIDENTAL OIL SHALE, INC.

                                                  HOUR (LOCAL STANDARD TIME)
DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24           DAY

  1                                                       1    1                                                                      1
                                                        NNW  NNW
  2                                                  3              3    2                                                            2
                                                    SW            WSW   SW
  3                                                                      3    3                                                       3
                                                                        SW   SW
  4                                                       2    5    5                                                                 4
                                                         SW  SSW   SW
  5                                                       4    4                                                                      5
                                                         NW   NW
  6                                                                                                                                   6
  7                                                                                                                                   7
  8                                                                                                                                   H
  9                                                                                                                                   9
 10                                                                      2                                                           10
                                                                        NW
 11                                                       1    1                                                                     11
                                                          N   NW
 12                                                            1                                                                      1
                                                             NNW
 13                                                       2              2                                                            1
                                                         NW             NW
 14                                                                      4    3                                                       1
                                                                        SW   SW
 15                                                       2                                                                           1
                                                         SW
 16                                                  1                        2    1                                                  1
                                                     N                        W  WSW
 17                                                  1         1    2    2    1                                                       1
                                                   ESE       ENE    E    E    E
 18                                                       1    2              3                                                       1
                                                         NW   NW            NNW
 19                                                       1         2    2    2                                                       1
                                                         NW         W  NNW    N
 20                                                                 4         4                                                       2
                                                                  NNW       NNW
 21                                                       1         2                                                                 2
                                                        WNW        NW
 22                                                            2    2    2                                                            2
                                                              NW  WNW  WNW
 23                                                       4    3         4                                                            2
                                                        SSW  SSW        SW
 24                                                                           5                             0                         2
                                                                             NW                             S
 25                                                                                                                                   2
 26                                                       2    1                   3                                                  2
                                                         NE  NNW                 SSW
 27                                             2                             3                                                       2
                                              SSW                           SSW
 28                                             6    5    6         5                                                                 2
                                              SSW    S  SSW       SSW
 29                                                       6                        4                                                  2
                                                        SSW                        S
 30                                                            3    5    3    4                                                       3
                                                              SW   SW   SW    S
 31                                             0         1    2    4              4                                                  3
                                              SSW         W   NW  NNW            NNW

/06/83-RPI)
```

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C                CB-TRACT
WD IN DEGREES AT 10M                                                      TRAILER AA23
WS IN MPS AT 10M                                                           FEB  1981
                                                                          OCCIDENTAL OIL SHALE, INC.

                                          HOUR (LOCAL STANDARD TIME)

DAY      1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1                                                                                    2
                                                                                     NNW
  2

  3

  4                                                                               2    1
                                                                                 NW  NNW
  5                                                                               4
                                                                                SSW
  6                                                        5                        3
                                                         WSW                        N
  7                                                                  2         4    5    4
                                                                   NNW         W  WNW  WNW
  8                                                   4    5    6         6    5    5    4
                                                    SSW   SW   SW        SW   SW   SW   SW
  9                                              4                                        5
                                               SSW                                       SW
 10                                         3
                                            W
 11                                                             5    4    4    4    4         5    3
                                                              SSW   SW   SW   SW   SW        SW    S
 12                                                                                     2
                                                                                       SW
 13                                                                       3    4
                                                                         SW  SSW
 14                                                                       4    4    5
                                                                         SW   SW   SW
 15                                                             1    0
                                                              WNW  NNW
 16                                                                  1         4    3    3
                                                                   WSW         S  SSW   SW
 17                                                                       2    2
                                                                         SW  WSW
 18                                                                  2              2    3
                                                                   WSW            SSW  SSW
 19                                                        3
                                                         SSW
 20                                                   5    3    1    0    2         0         0
                                                     NW  NNW  NNW    N    N       ENE       SSE
 21                                                   1
                                                    NNW
 22                                                        1    1                        2
                                                           N  NNE                        N
 23                                                                                      4
                                                                                        SW
 24                                                                  6    6    6
                                                                    SW  SSW   SW
 25                                                                  5
                                                                   SSW
 26                                                                            5
                                                                             SSW
 27

 28                                                                            4    3    3
                                                                              SW  SSW   SW
   1/06/83-RPI)
```

```
HOUR  WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C                                  CB-TRACT
WD IN DEGREES AT 10M                                                                        TRAILER AA23
WS IN MPS AT 10M                                                                             MAR  1981
                                                                                            OCCIDENTAL OIL SHALE, INC.

                                                 HOUR (LOCAL STANDARD TIME)
DAY     1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

  1                                                                 3           1     3     2           2
                                                                  SSW         NNW    NE   ENE         WNW
  2                                                                                         5
                                                                                          SSW
  3                                                                                   1     2           4
                                                                                         NE   NNW           N
  4                                                                                               3     2
                                                                                                NNW   NNW
  5                                                     2     3           4
                                                      ESE     S          SW
  6                                                                       2     3
                                                                        WNW   WNW
  7

  8

  9

 10

 11

 12                                                                                   1
                                                                                    NNW
 13                                                                             2                 3
                                                                               SW                SW
 14                                                                 1                 4                 4
                                                                   NW                 N                 N
 15                                                                                         2     3     3
                                                                                            W   WSW    SW
 16                                                                 6     6     6     6     5
                                                                  SSW   SSW   SSW   SSW   SSW
 17                                               3                 4     3           3     2           2
                                                  W                NW    NW         NNW    NW         NNW
 18                                                           1     1           1           0     0     0
                                                            WNW    NW          NW           N     N   NNE
 19                                                           4     5     4           5           4
                                                            SSW   SSW   SSW         SSW          SW
 20                                                                       6           6     6
                                                                        SSW           S   SSW
 21                                                                       3     3     4     3     2     0
                                                                        NNW   NNW   NNW    NE    NE   ENE
 22                                                                                               3
                                                                                                ESE
 23                                                                 1           1           2     3
                                                                    N          NW          SE    SE
 24                                                                             4     3           4
                                                                              NNW     N         NNW
 25                                                           4     3                             5
                                                            SSE     S                           SSW
 26                                                           5                                                                             4
                                                              S                                                                           SSW
 27                                                                                   5     5
                                                                                    SSW   SSW
 28                                                           4           5
                                                             NW         NNW
 29                                                                                               5     5     5
                                                                                                 SW    SW   SSW
 30                                                           3
                                                            NNW
 31

   1/06/83-RPI)
```

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3										5 NW						3 NNW								
4																								
5																								
6															5 SW		6 SW							
7												5 W				2 N	2 NNW							
8									2 S															
9									6 SSW															
10									4 SSW		5 SW	6 SW					6 SW							
11									5 SW	5 SW	5 SW													
12											5 SSW			5 SW	6 SW	5 SW	4 SW							
13														2 NNW	1 NNW	1 NNW								
14														2 SW										
15									4 SSW				6 SW				5 WSW	4 WNW						
16										4 SW														
17									2 WSW									3 SW						
18											3 E		3 NNW											
19									4 S															
20																6 SW	6 SW	6 WSW						
21										6 W	5 WSW	6 WSW	5 WSW	5 WSW				6 W						
22																		2 NW						
23																								
24									2 SW	1 W		1 NNW				2 NW	2 NW							
25												6 SW					5 WSW							
26										6 SW														
27													5 WSW		5 SSW	5 SW								
28									1 NW	2 NNW														
29									1 NNW			1 N	1 N					4 NW						
30									1 NW	2 N	3 NNE				3 N		3 NNE							

```
HOU   WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C          CB-TRACT
WD IN DEGREES AT 10M                                                TRAILER AA23
WS IN MPS AT 10M                                                     MAY  1981
                                                                    OCCIDENTAL OIL SHALE, INC.

                                      HOUR (LOCAL STANDARD TIME)

DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1
  2
  3                                                       6
                                                         NW
  4
  5                                                       6
                                                         SW
  6                                                                                   5
                                                                                     NW
  7                                                               5       4
                                                                WSW     WSW
  8                                       6       5               4   3
                                        NNW     NNW              NW   W
  9                                                   1                           0
                                                     NW                           N
 10                                                   2
                                                    WNW
 11                           5   3                                           4
                             NW  NW                                           N
 12                                           4       5           5           3
                                            WNW      NW           N          NE
 13                                   0
                                      N
 14                                                   6   6
                                                    SSW SSW
 15
 16                                                       3                   0
                                                         SW                 NNE
 17                       2                                                       4           2
                          W                                                      NW         WNW
 18                               1                       1
                                WSW                      SE
 19
 20
 21
 22
 23
 24
 25                                                   2
                                                    ESE
 26                                                           6   5
                                                             SW  SW
 27                                       2                               4   6   3   1
                                         SW                             WNW NNW  NW NNE
 28
 29
 30
 31                                           2
                                            SSE
```

```
        HOU    WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C                      CB-TRACT
        WD IN DEGREES AT 10M                                                            TRAILER AA23
        WS IN MPS AT 10M                                                                JUNE  1981
                                                                                        OCCIDENTAL OIL SHALE, INC.

                                                   HOUR (LOCAL STANDARD TIME)

DAY     1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3                                                                                          3
                                                                                           SSW
  4
  5
  6                                             4                                       5
                                               SW                                      SW
  7                                                       6
                                                         SW
  8                                                  6                                  6
                                                   WSW                                 SW
  9                                                                                5    4    3
                                                                                 NNW  NNW   NE
 10                                                                                              3
                                                                                                NE
 11                                             1              2                        5
                                              NNW             NW                       SW
 12
 13                                                                                               4              3    4
                                                                                                 NW              N    N
 14                                             3         3                             4    4
                                               NW       NNW                            NW  WNW
 15                                                       3
                                                        NNW
 16                                             1
                                               SW
 17                                                       5
                                                          W
 18
 19                                                  3                        6    5    5
                                                   WNW                       SW  WSW   SW
 20                                                                           6    5    6
                                                                             SW  WSW  WSW
 21
 22                                             1
                                              ENE
 23                                                       5
                                                         SW
 24                                                  1              3
                                                   NNW              N
 25
 26
 27                                                                                          5
                                                                                            NW
 28                                                            3
                                                             SSW
 29
 30

     /06/83-RP(I)
```

```
HOU   WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C              CB-TRACT
WD IN DEGREES AT 10M                                                  TRAILER AA23
WS IN MPS AT 10M                                                      JULY  1981
                                                                      OCCIDENTAL OIL SHALE, INC.

                                  HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1                                                       3
                                                          W
  2                                                                                     6
                                                                                      NNW
  3                                                       1
                                                        NNW
  4
  5
  6                                                                      4                   3         6
                                                                        SW                  SW        NW
  7
  8
  9                                                  3
                                                   WSW
 10
 11                                             2
                                               SW
 12
 13                                                                           0
                                                                              S
 14
 15
 16
 17
 18
 19
 20                                                                 6
                                                                  WSW
 21                                                       5                        4    5    6
                                                         SW                        W  WSW   SW
 22                                                       4              4              4
                                                        SSW            WNW             NW
 23                                                       4                        5
                                                        SSW                       NW
 24                                                                                5         4
                                                                                 NNW       ENE
 25                                             2              5    5    6
                                               SE            SSW   SW   SW
 26                                                                 6    6         6
                                                                  SSW   SW       NNW
 27                                                                                                   1
                                                                                                     NNE
 28
 29
 30                                                  4              5         6         5    5
                                                   SSW            WSW       WSW       WSW   SW
 31
```

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABI  Y CLASS C                  CB-TRACT
WD IN DEGREES AT 10M                                                      TRAILER AA23
WS IN MPS AT 10M                                                           AUG  1981
                                                                          OCCIDENTAL OIL SHALE, INC.

                                                HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1
  2
  3                                                                               4         4
                                                                              SSW        SW
  4                                            5                                            4
                                             SSW                                          WSW
  5                                                                3    3              2
                                                                   S  SSW             SW
  6                                       1    1                             4    3
                                        NNW   NW                           NNW  NNW
  7                                                                                         4
                                                                                          NNE
  8                                            1
                                              NW
  9                                                                                         4
                                                                                           NE
 10                                            3              2    3
                                             WNW              N   NW
 11                                                 1    1
                                                   NW   NW
 12                                                                               2
                                                                                  N
 13
 14
 15                                                                4
                                                                   W
 16
 17
 18                                                      2                   5
                                                       NNW                 SSW
 19                                                                4
                                                                 NNE
 20                                                                                    3    4
                                                                                     WSW  WSW
 21                                                                4
                                                                   W
 22                                                                               3
                                                                                 SW
 23
 24
 25
 26
 27
 28                                                                                         3
                                                                                           SW
 29
 30
 31

(01/06/83-RPI)
```

```
HO    WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C          CB-TRACT
WD    DEGREES AT 10M                                                TRAILER AA23
WS IN MPS AT 10M                                                    SEPT  1981
                                                                    OCCIDENTAL OIL SHALE, INC.

                                          HOUR (LOCAL STANDARD TIME)

DAY      1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1                                                             5    5                        4
                                                               SW  SSW                      WSW
  2                                                                       6         6                        4         3
                                                                         SW        SW                       NE        NE
  3                                                                  3         4
                                                                    SW        SW
  4                                                             5                             4
                                                               SW                            SW
  5                                                                                 4
                                                                                  WSW
  6                                                                                      1
                                                                                       SSW
  7                                                                            4
                                                                             NNW
  8                                                                  2                        3    1
                                                                   WSW                      ENE   NW
  9
 10
 11
 12                                                                                      2
                                                                                        SW
 13
 14
 15
 16                                                                                           4                        1
                                                                                              N                       SW
 17          1
            SW
 18
 19
 20                                                                                           6
                                                                                             NW
 21
 22                                                                                 6
                                                                                   SW
 23
 24
 25
 26
 27
 28
 29
 30                                                                                      3
                                                                                         N
```

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABI[illegible] CLASS C          CB-TRACT
WD IN DEGREES AT 10M                                                    TRAILER AA23
WS IN MPS AT 10M                                                         OCT  1981
                                                                        OCCIDENTAL OIL SHALE, INC.

                                           HOUR (LOCAL STANDARD TIME)

DAY   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

  1
  2
  3
  4
  5
  6
  7
  8               5
                SSW
  9
 10                                                                                               5
                                                                                                  S
 11           5                                                   1
            SSW                                                 ESE
 12                                                                                           0
                                                                                            SSE
 13                                               6
                                                 SW
 14                                                       4
                                                         SW
 15
 16                                                       5       5   4
                                                         SW      SW  SW
 17                                                                       0
                                                                          N
 18
 19                                                                   3
                                                                    WSW
 20                                                                   4
                                                                     SW
 21
 22                                                                   1       1
                                                                      N     SSW
 23
 24
 25           1   0
             NW  NW
 26                                                               3
                                                                 SW
 27                                               5
                                                 SW
 28
 29                                                           3
                                                             SW
 30
 31

(01/06/83-RPI)
```

HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3													1 NW											
4																								
5												3 SW												
6												4 SW	4 SW		2 WSW									
7										1 N						3 N								
8																								
9												1 N												
10											1 WSW		2 WSW	3 WSW										
11														1 NNW	2 NNW									
12											4 SW					5 SSW								
13													6 SW		5 SW	4 SW								
14																								
15												6 SW	5 SW	6 SW	5 SW									
16											4 SSW			6 SW		4 SSW								
17										4 S	2 SE		6 SSW	5 SSW										
18																								
19																								
20																								
21											3 SSW													
22											6 SSW	6 SW	6 SSW		5 SW									
23											5 SSW			5 SW										
24																								
25											4 NW	4 NW	4 NNW	4 N		4 NNW	3 NNW							
26																								
27															3 WSW									
28																								
29													2 WNW	2 NW	1 WNW	2 NW								
30												3 WNW												

/06/83-RPI)

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STAB   Y CLASS C                 CB-TRACT
WD IN DEGREES AT 10M                                                      TRAILER AA23
WS IN MPS AT 10M                                                           DEC  1981
                                                                          OCCIDENTAL OIL SHALE, INC.

                                                 HOUR (LOCAL STANDARD TIME)
DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1                                                      4         4         5    5
                                                       SSW       SSW       SSW  SSW
  2                                                 5    6    6
                                                  SSW  SSW  SSW
  3
  4
  5
  6                                                      4         4
                                                       SSW        SW
  7
  8                                                           3    3
                                                            WSW   SW
  9                                                      3         5
                                                         S        SW
 10                                                                     4    5
                                                                       SW   SW
 11
 12                                                 3                        4
                                                  SSW                       SW
 13
 14                                                                5         4
                                                                 SSW        SW
 15
 16                                                                2
                                                                  NW
 17
 18
 19
 20
 21
 22                                                                          3                   3
                                                                           NNW                 NNE
 23                                                           1    1              2
                                                              N    N             NW
 24
 25                                                           4    4    5         4
                                                             SW  WSW   SW        SW
 26                                                      4    5    5    5    4    4    3              3
                                                        SW  SSW  SSW   SW  SSW  SSW  SSW            SSW
 27
 28                                                                4         4    4
                                                                   W       SSW    S
 29
 30
 31                                                                                    1
                                                                                      SE

(01/06/83-RPI)
```

HOU WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1											0 NNW			2 NNW	1 N	1 SW								
2										2 SSW						1 SSE	2 SSE							
3	0 SE										1 N						2 SW							
4										1 ENE	0 WSW						2 SW	2 W	4 WSW	2 W	1 W	1 SE	0 SSE	
5	1 W		1 NW	2 NW	3 NW		4 NW	4 NW	4 NNW	3 NW	3 NW						2 NW	1 N	0 NE	1 NW	1 WNW		0 WNW	1 WSW
6	0 W	1 WSW	1 WSW	1 S								1 NNW	0 NW	1 NNW	1 WNW	0 W	1 W							
7														1 WNW	1 NW	2 WNW	2 W							
8													0 NNE	0 NNE	0 NNE	0 N								
9											0 NW	1 N	1 N	2 NNW	3 WNW	3 WNW	2 NW							
10											1 NE	1 WNW	1 NW	1 NNW		2 NNW	2 WNW							
11											1 NE			1 N	1 NW	1 NW	2 WNW							
12												1 N		2 WNW	2 WNW	2 WNW	1 WNW							
13											1 NW			2 WNW		3 NW	3 NNW							
14																	3 SSW							
15											2 SW		1 SSW	0 SSW	0 NNE	0 NNE								
16																		1 WSW		1 SW			0 ESE	
17										1 E		1 NNE					1 E							
18																	3 NW	2 NW						
19													1 NNW				1 N	1 ESE						
20										2 WNW					4 N		3 NNW							
21										0 NNE			1 NW			2 NNW	2 NW							
22											0 NNW	1 NNW				2 WNW	2 WNW							
23										1 ENE	2 WSW			3 SSW		3 SSW	2 SSW	1 SSE						
24			6 SSW								7 WSW	7 SW	8 SW	8 SW			2 W	2 W	3 W	1 WSW	0 N	1 NW		1 S
25									0 WSW								2 N	1 NE	1 SSE					
26																		4 S	1 S	2 SSW	1 SSW		0 SSE	
27		0 S	0 S	0 SSE	1 SE				2 SSW								4 SSW	2 SSW	1 S	1 SSE	1 S	2 SW	2 SW	2 SSW
28	3 SSW	2 S	2 S	4 SSW	4 S	1 S	1 SSW	2 S	5 SSW				7 SSW		6 SSW		4 S			5 SSE	6 S	5 S	4 SSW	2 SSE
29	3 S	1 SSE	0 SE	0 ESE	2 W	1 W		1 W	1 S	3 SW								1 SSE	1 SE	1 ESE	4 S	3 SSE	6 S	7 S
30			4 ESE				6 S	9 S	5 S	7 S	7 SSW	8 SSW					5 S	4 SSW	4 SSW		3 S		2 SSW	1 W
31	2 WSW	1 SW						1 S	1 SSW						4 NNW	5 NNW		3 NNW	3 NNW	1 WSW	1 SW		2 WSW	2 W

/06/83-RPI)

HOURL WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 WNW	2 NW	2 WNW		1 W	2 WNW	3 W	3 W	2 W	2 NW	4 NNW	6 NNW			3 N		1 N	1 NNW						
2												1 SSW	1 SW	1 SSW	2 SW		4 SW							
3												0 WNW	1 WSW	3 W	2 SW	1 SW	0 W	2 W						
4						0 SE				0 NW	0 N	1 NNW	1 NNW	2 NW			2 NW	2 NW						
5											1 NNE	1 N	1 NNE	3 SW			3 SW	2 SSW						
6										1 SW				5 NW		1 NNW	5 WNW	3 NNW						
7											1 N	2 NNE						2 W						
8									4 SSW				7 SW					4 SW						
9		3 SW	5 SW	6 SW	7 SW	4 SSW	4 SW	4 SW								6 SW	6 SW		6 SW	5 SW	6 SW	4 SW	5 WSW	6 WSW
10	7 W	7 W				3 WNW	4 WNW											1 E						
11					2 S				1 SSE	5 SSW	6 SSW									1 S	2 SSW	1 SE	3 SSW	4 SW
12	2 SSW								0 SE	0 SSW	1 WSW	1 S	2 SW	2 SW	2 SSW	2 SSW		3 SSW						
13										1 ENE	0 NW	1 SW	2 SSW				4 SSW	2 S	1 SE					
14									1 SE	1 SW	1 W	2 SW					5 SW	4 SW						
15		2 NNW	1 E	2 SE					0 SSE	0 W	0 SW			1 E	1 ENE	0 WSW	2 SW	2 W						
16										1 ENE	1 S							3 SW						
17											2 SE	0 SE				2 WNW	1 N	2 N						
18										0 SE	1 N	0 NW												
19										2 S							1 SW	0 SE	0 SE	0 S	6 SSW	8 SSW	7 S	8 S
20	8 S	8 SSW	7 SSW	6 SSW				6 WNW	6 WNW								1 SE		1 NNW	2 NNE	3 N	3 NNW	3 NNW	
21			0 NW	0 W	0 SW	1 W		0 NW	1 N									2 NNW	0 W					
22									1 E	1 NE				0 ENE				1 NW						
23										1 SW								3 SSW						
24												6 SSW				7 SW	6 SW	4 SSW				5 SSW		
25									4 S		6 SSW	6 S		7 SSW	7 SW	6 SSW	7 SSW	5 SSW	6 S	5 S				
26					4 SSW	7 SSW	8 SSW	7 S	6 S	5 SSE	6 S	8 S	7 S	7 S				3 WSW		4 SSW	5 SSW	4 SSW	4 SSW	5 SSW
27	5 SW	5 SW	4 SW	2 SSW	0 E	1 S			1 E	1 NNE	1 NNW	1 NNE	1 NE	1 NNE	1 NNE	0 E	2 S	2 S						
28									1 SE	1 WSW								2 SW						

/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										3 SW								2 S						
2										2 SSE						4 WSW	2 SW	2 SSE	2 SSE		1 S	1 S		
3										0 SSW	0 NNW	1 N	1 NE			3 N		3 NNE	2 NNE	2 NNE	1 NNE	2 NE	1 NW	3 WNW
4	4 NW	4 NW	4 NW	4 NW	4 NW	4 NW	4 NNW	4 NNW	4 NNW									2 NNW						
5																	1 S	1 W						
6										0 S											1 NE			
7		0 SE							0 ENE	1 N	2 NW	3 NNW	3 NW	3 NNW	3 NNW	2 NNW	2 NW	1 WNW	0 SSW					
8												0 NW	2 NW	2 NNW	2 NNW	2 NNW	2 NNW	2 NNW	2 WSW		1 SE			
9											1 NNW	1 NNW	1 N	1 NNW	1 W	2 WNW	4 NW	2 NW						
10									1 WNW	2 NW	2 NW	2 NW	1 NNW	1 N	2 NNE	2 N	2 NNE	3 NE						
11									1 NW	1 WNW	0 NNW	0 NNE	0 SE	2 NW	2 NNW	2 NW	2 WNW	1 NNW					2 S	2 S
12	1 S	1 S	1 SSW	1 SW		0 SSW		1 SSE	0 SSW		2 SSE	1 SSW	1 SE		1 WSW	2 ESE	1 N	0 N	1 S					
13																	2 S							
14									0 WNW	1 NNW						3 N		3 NNW						
15									1 ENE	0 N	1 N	1 N		0 SSW				3 SW						
16									2 SSW							5 SSW	4 SW	5 SW	4 W	1 WSW	3 SW	5 SSW		
17		4 WNW	5 W	4 W	3 WNW	3 NW	2 WNW		4 WNW	4 NW			3 NW			2 N		0 N	0 SW					
18	0 SW	0 SW	1 SW	1 SW	1 SW	1 SW			1 NW			0 NW		1 NNE				2 SSW	1 SSW					
19									1 SE								8 SW	5 SSW	5 SSW	3 SSW	1 SSE	1 SSE	2 SSE	2 SSE
20	1 S	2 S							7 SSW				6 SSW				4 SSW	3 SW	4 W					
21	3 WNW	2 W	2 WSW	2 WSW	1 WSW	1 WNW	2 WNW	2 WNW	3 WNW	4 WNW	3 NNW							1 NE	0 SSE					
22									1 E	1 E	2 NE	1 NE	0 ENE	0 N	2 E		2 SW	3 SSW						
23								2 SE	1 ESE	1 NE							2 ESE	2 ESE						
24				2 WNW	0 S				1 S		5 NNW	4 NNW			3 N		1 E	1 NNW	1 SW					
25									3 SE								4 SW	2 SSW	1 SSE	2 SSE		1 SE		
26		6 S						4 SSE	4 S		7 S	6 S	8 S	10 SSW	10 S	7 S	7 S	8 S	8 S	7 S	6 SSE		7 SW	
27	2 SW		2 SSW	2 S	4 SSW	6 S	4 SSE	6 S	7 S	8 S	7 S	7 S	6 S						2 SSW					
28	0 SSW		0 E	1 SE	1 SSE	1 SSW	1 WSW	2 W	2 WNW		6 NNW		5 NNW	7 NNW	5 N	5 NNW	5 NNW	4 NNW	5 NNW	3 NNW	2 NW			
29								0 SE	0 S	3 SW	4 SSW	4 SW							4 S			6 S	5 S	
30			5 S	5 SSW	4 SSW				3 WSW		3 NNW	2 NE	1 ENE			3 NE	1 ENE	1 SSE	2 SSE					
31									3 SSW	4 SSW	4 SW	4 SSW	4 SW	4 SW	4 SW	4 SSW	4 SSW	3 SSW						

/06/83-RPI)

HOUR[illegible] WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1					7 S	5 S	8 S	8 S	4 S	6 S	6 SSW	7 SSW	6 SSW	6 SSW	7 SSW	6 SW	5 SW	4 SW						
2		5 S	6 SSW	5 S	5 SSW	5 SSW		4 S	5 SSW	7 SSW	6 SSW	6 SW	8 SSW	8 SSW	8 SSW	6 SW	5 SW	3 WSW		5 SW		7 SW	4 WSW	4 WSW
3	3 SSW	5 SW	4 SW	1 WSW	3 SSW	4 SW	3 SW	3 WSW			5 NNW	4 NNW	3 N	3 N	3 NNW		3 NNW	2 NNW	2 NNW	1 N	0 WNW	1 WNW	0 SW	
4					2 W	1 WNW	1 NW	3 WNW	2 W	3 WNW	5 NW			3 NNW	4 NW		3 NNE	0 SE	0 NE	0 ENE				
5									3 S	4 SSE	3 SSE				3 5	3 S	4 SW	4 SW						
6						2 SE	2 ESE	3 S	6 SSW	8 SSW	7 SW	7 SW	7 SW	7 SW		6 SW		5 SW						
7									0 SSE	3 SW	4 WSW							1 SSE		1 NW	1 WSW			1 W
8	2 W	3 NW	2 W	1 SSW	0 W	1 W	2 WSW	1 S										4 WSW	4 SW					
9						6 S	5 S	6 SSW		7 SSW	7 SSW	6 SSW	7 SW	7 SW	6 SW	7 SW	6 SW	5 SW						
10				6 5									7 SSW	8 SW	7 SW	6 SW		6 SSW						
11								5 SW				7 SSW	7 SW	7 SW	8 SW	8 SW	8 SW	7 SW						
12								5 SSW				6 SW	7 SW					4 SW						
13								2 SW		2 NNW							1 NW	0 N						
14								0 NNE	1 NW	1 NNW	2 NNW				2 SW		4 NNE						5 SSW	4 SSW
15	1 SSE		2 SSW	2 SSW	2 S	5 S	5 S	4 SSW						6 SW	8 SW	6 SW			3 W	2 S				
16									4 SSW					6 WSW	7 WSW		2 NW	1 ENE						
17																								
18								0 E	1 N	2 NNE		1 NNE		3 N		1 SE	1 N	3 WSW	6 SSW	3 S	4 SSW	4 SW	2 SSW	2 SSW
19	2 SE	2 SSE	1 ESE	2 ESE	2 ESE	1 SE	3 S	3 SE		8 S	8 S	7 S	7 SSW	7 SW	7 SSW	7 SSW	7 SW		3 SW					
20									6 SSW	8 SSW	7 SSW	6 SSW	7 SSW	7 SW	6 SW				5 SW					
21								3 SW							7 WNW	6 WNW			5 W	1 NW	2 NE	2 NE	2 NE	0 S
22									1 NNE										2 NE					
23								1 NE	1 ESE	1 NNE								1 N						
24																		2 W	4 W					
25								1 ESE	3 SSW				6 SW	7 SW	7 SW	6 WSW		4 SW	4 SW					
26								4 S			6 SW	7 SW	8 SW	8 SSW	7 SW	6 SSW	7 SW	6 SW						
27								1 ENE	1 ENE	1 ENE				6 SW				5 NW	5 NW	5 NW	4 NNW	2 N	2 N	3 N
28							2 W											3 N	2 NNW					
29								1 WNW		1 NNE				1 NNE					3 NNW					
30								1 WNW										3 NNE						

HOU IND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1								1 ENE	1 N															
2														8 SW	8 SW	7 SSW		7 SSW	4 WSW	0 ENE	2 N	2 SE		
3								2 NNW	2 NW	0 W	1 ESE		3 NNW											
4											1 NE				2 N	2 N		1 N	2 N	1 NE				
5										1 SE		5 SSW			5 SSW	3 SSE	4 S	6 S	7 S	9 S	7 SSE	2 SSW	4 WSW	1 ESE
6	4 SE				1 S				3 SSW	6 SSW	8 SSW	6 SSW	6 SW	7 SW	7 SW	6 SW	5 SSW	4 NNW	2 NNW	4 NNW		5 NW	1 NNW	1 NNW
7	2 WNW	2 WNW							3 NW	4 NW	4 WNW		2 NNW						3 SW					2 SW
8	1 SSW								3 NNW				5 NNW		2 WNW				0 NNW	3 N	3 NW	2 W	1 N	1 N
9	3 NNW	3 NW	2 WNW	3 NW	2 NW	2 NNW	2 WNW	1 WNW	2 NNW					2 NW	1 NNE		1 NNW	1 N	1 NNE			1 SW	1 SW	
10														2 WNW	0 WNW		4 SW	4 SSW				5 S	6 S	6 S
11	8 S	6 S				6 WNW								7 SW	4 SW	2 SSW		6 W			1 SSE			
12												7 WNW			4 WNW		5 NNE	4 NNE		1 SSE				
13								0 SSW			1 NNW	1 NNW				2 N	2 N	2 NNW	2 NNW	0 ENE				
14								2 SSW	3 SW		5 SW				6 SW	7 SW	8 SW	6 SW						
15				5 S			6 S	7 S	6 SSW	7 SSW	7 SSW	7 SSW	7 S		3 S		7 SW	2 SW	4 SSW	6 SW	4 SSW	4 S	4 S	4 SSW
16							2 S	3 SSW	3 SW									4 NNW		1 S	2 S			
17					2 WNW		0 SW	1 SW	2 W	3 W	2 NW	3 NNW	2 NNW	2 NW	3 NNW	4 NW		2 WNW	2 NW		3 NW	3 WNW		2 WNW
18	2 NW	2 WNW	2 WNW	2 NW	1 NNE	1 NE	0 WNW		1 WSW	1 NW	1 NNW	1 NNW	1 NNE				2 S	1 SSW						
19																								
20	2 S	7 SSE	6 SE					8 S	9 SSW	9 S	8 SSW	6 SSW	5 SSW	6 S	7 SSE	5 SW	4 SW	5 SW	4 SW	6 SSW	5 S		5 S	
21						5 S		8 SSW	8 SSW		8 SW	9 SW	10 SW	8 SW	8 SW	9 SW	8 SW	7 SW	4 SW					
22							3 SW						2 NNW		4 NW	3 WNW	1 N		2 NE				1 NNE	1 NNE
23	0 SE				1 W	0 W	1 NW	1 NNW		1 NNW	1 ENE					3 NNE			3 NNE					
24									0 ESE	2 SW	3 SE	3 SSW	2 SE	1 WSW	1 NW	1 ESE								
25									2 SW	4 SW	4 NW	1 N			2 SW		2 SE	1 NE	2 E					
26								1 ESE			4 SW		5 SW	6 SW			4 WSW	4 SW	4 WSW	5 SW	4 SW		3 SW	3 SSW
27		2 S					1 S	4 SW	4 SW													1 S		
28											1 NNW													
29														3 N	4 N	4 NNE	1 E			2 ENE				
30										0 NW					1 NW		2 W	2 NW	4 NW	2 W				
31									3 S						4 SSE	4 SSE	4 SSE	4 SSW						

/06/83-RPI)

HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3															2 NNW	4 NNW	2 W					0 SW		1 SE
4	1 NW	1 W	1 W	1 SW									1 N	2 NW	2 NNW					1 ENE				
5									2 N						2 NW			2 N		2 NE				
6																		5 SW						
7	1 NE								6 SW	6 SW		7 SW	6 SW	7 SW	8 WSW	7 WSW	6 WSW	5 WSW						
8								5 SW	5 SW		6 SW	6 SW	7 SW	6 SW	7 WSW	6 SW		6 SW	6 SW					
9		6 SSW	6 SSW					2 NW		3 NW		4 NW		5 NW	5 NW		4 NW		3 NNE					
10								1 E					7 SW	8 SW	7 SW	6 SW	7 SW	5 W	4 NW	4 N		3 NW	3 W	3 W
11	2 W							1 N			2 NNW							6 WSW	4 SW				6 SSW	6 SSW
12	5 SSW							6 SSW	6 SSW	6 SSW	8 SSW	7 SW	7 SW	8 SW	8 SSW	8 SW	7 SW	7 SW	6 SW	5 SW				
13						4 WNW	4 NW	4 NW	2 NW			2 N		10 WSW	10 SW	8 WSW	9 WSW	7 W			4 N			3 N
14	2 N	1 NNW						3 NW		3 NNW				4 WNW		3 NW				2 N	1 NNE		1 SW	2 SW
15								1 NNE	1 N						3 N			3 NW	4 NW	2 NW	1 SW			
16								1 NE							6 SW	6 SW	7 SW	7 SW	6 SW	5 SSW	5 SSW	6 SSW	7 SSW	8 SSW
17	9 SSW	9 SSW	8 SSW	6 SW				2 NW				6 WNW		6 WNW	6 WNW	7 WNW	6 WNW	6 WNW	5 NW	5 NW	3 NW	2 NNW		
18										0 NE				4 WNW				4 SW		0 NW				
19											4 WNW	6 WNW	7 WNW					6 WNW	5 WNW	4 NW				
20										4 W		5 WNW						6 W	5 WNW	3 WNW				
21				1 SSW					1 NNW	3 NW	4 WNW	6 WNW	7 WNW	7 WNW	6 WNW	7 WNW	6 WNW	7 WNW	6 NW	5 NW				
22								1 E			1 NE					4 NW	4 NW	2 N	1 N					
23										6 SW		4 WSW		6 WNW	3 W	2 NNW	4 NNW	5 NW	3 NNW					
24									1 NW		1 NW			3 N				4 NNW	4 NNW					
25									2 WNW	1 NNW	1 N			3 SW	0 ESE	2 NNE			4 ENE					
26							4 S	3 SSW	4 S	4 SSW							4 NNE	0 SSE	6 S				6 SE	
27										4 SSW							4 NNW			1 ESE		5 SSW		
28															0 SSW		3 NE		5 S					
29																								
30																								

/06/83-RPI)

HOU WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										2 SW		3 NNW	4 NW		3 NNW	3 WNW				1 WSW	1 WSW			
2	0 SW	1 SW	1 W	1 W	1 WSW	1 WSW		1 NNW			2 N			2 NW	5 W	6 NW		3 NNW		2 NE	0 NE			
3								0 NW	2 NW	1 NNW			2 NW	2 W		5 WSW	4 SW	0 WNW		2 NE	2 E			
4										2 NNW	3 N		3 N			3 NNW	2 N	1 NNW		2 ENE				
5										2 ENE							2 SE							
6								1 SE			5 SW	5 SW			4 SW	4 SW	4 SW				2 NW			
7																								
8													2 NW	2 NNW		2 NNW	3 NW	3 N	4 SE	6 SE	5 SSE	4 SSE		
9							2 SE	2 SSW	2 SW			1 NNW	1 NE		2 S	1 W			2 SSE	3 SSE				
10								1 SSW	3 SSW	4 SW	4 SSW			4 SW	2 SW	5 NW		2 SE		3 WNW	2 WSW			
11								0 SW		2 WNW			3 NNW				2 NW	0 N	0 N	3 SW				
12								1 ESE	2 S		4 S		1 SE			3 SW	1 NW	2 NNW	0 N	2 NNW				
13									2 S	3 SSW	4 SW	4 SSW	3 SSW	1 SSW					3 SSW					
14								1 ESE					1 NNW		1 SSE	1 E		1 NNW	0 SW	2 WSW				
15									1 N			3 NNW	3 NW	3 N	2 N	2 N			2 NNE					
16								2 SE	4 SSE	4 SE	2 S	3 S	3 S	2 SSE	0 S		4 ESE	5 SE	4 SE	3 ESE				
17										2 SSE	2 ESE		3 SSE				3 SSE	2 SSE						
18									0 SSW	1 S	1 W			4 SSW	6 S				2 SW			5 N		
19								3 SE	3 SW	1 S		6 WNW	8 WNW	8 WNW	6 NW	4 NW		4 WNW	4 WNW					0 SSE
20										1 SW				8 WSW	7 SW	7 SW	6 SW	6 SW	4 SW					
21									3 SW															
22									4 SW						6 NW	5 NNW		4 NW	4 NW	1 W				1 SSW
23									3 SSW	4 SSW								1 NW	3 SW	5 SE				
24								2 SSW	4 SSW	4 SW					4 WNW		4 NNE			0 WNW	4 ESE			
25	5 S	7 SSE			1 SSE			1 ESE		3 SSE	4 S				6 SW	6 SW	7 SSW	3 WSW						
26								3 SE	6 S	8 SSW	7 SSW	7 SW						0 WSW	1 WSW	2 SE				
27								0 NNW	1 WNW	2 NNW	2 NNW	3 NNW	3 NNW	3 NNW	4 NW	4 NW	4 NW		2 N					
28									0 WNW	4 WNW	6 WNW	6 NW	5 NW	5 NW	6 NW	4 WNW	3 W	4 WNW	4 WSW					
29									2 ENE	1 NW	1 SSW	2 E	1 S	4 SSE				1 SSE						
30								1 ESE	1 SSW					6 SW					3 WSW					
31																								

/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																			4 WSW					
4								4 SSW											3 SW					
5									1 N	1 N								4 SW	3 SW					
6							1 WSW										4 N	4 NNE						
7																			4 NE					
8								1 NW										2 N					7 NNE	
9	0 ESE							1 NNW								6 NNE	5 NNE		4 NE				4 WNW	3 WNW
10	1 WSW							1 W						2 W	1 S	2 SE	2 E	2 ESE						
11								0 SW	0 NNW			0 N		1 SW	1 SSW	0 SSE	1 N	1 NNW	1 WNW					
12									0 ENE	1 NNE	1 SE			2 WNW	3 WNW									
13												4 SW	5 S		4 SW	2 NNW	2 N	2 NW	4 NW	1 NNW				
14										3 SW							2 NW	0 SW						
15										3 SSW	2 S			3 WSW			5 ESE	4 SE	1 SSW					
16											2 NW	2 NW		3 NNW		4 NNW	7 NNW	5 N	4 E					
17														3 NNW				4 N	4 NE	2 ENE				
18												3 NNW				2 S	1 ENE	0 SSE						
19										0 ENE	1 WNW					4 WNW	3 WNW	3 SSW	2 SW					
20										1 NW			1 W	1 W	2 WSW	4 SW			4 SW					
21									4 NNW	8 NW		4 NW		5 S		1 NE		2 SW						
22									1 ESE								3 W	3 WNW	3 W					
23									1 SSW			3 WNW		1 WSW	6 SSW	6 S	5 S	1 S	1 W	1 SW				
24														3 E		3 SE	2 ESE							
25												2 NNW		3 WSW	1 WNW	3 WSW	4 NNE							
26											3 NNW	3 NNW	3 NNW		2 NNW	3 NW	2 NNW	4 ENE	6 ESE	4 SSE				
27														2 N		4 S	4 SSW	3 S						
28												1 NW		5 SSW	5 SW	3 WSW	1 WSW						4 SSW	
29								2 S	3 SSW	4 SW	5 SW	5 SW	4 SW	2 NNE		3 WSW	2 NNW	1 N						
30				5 SE	7 SSE	7 SSE				5 SSE	6 S	7 SSW	8 SW	8 SSW	6 SW	6 SW	10 WSW					5 SSE		
31											5 SW	4 SSW			4 W	4 WNW	4 WSW	7 SW	7 SW					

(01/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										4 SW														
2									5 SW		4 SW				6 SW						3 ENE			
3									4 SSE	3 SSW	4 S							1 NNW						
4										4 SW	5 SSW										7 SSW	8 SSW	7 SSW	4 S
5				2 S	0 WSW	1 SSE	1 S	1 SSW	4 SSW	5 SSW	4 SSW	4 SSW	4 SW	4 SSW			4 WNW	2 NW	0 NW	2 NNW	2 NW	1 NNW	1 WSW	1 WNW
6	1 WNW	0 N	1 NW	2 NW	1 NNW		1 WNW	2 NW	2 WNW	2 WNW	1 WSW	0 NNE		2 WNW		1 NW		2 SE				1 S		
7	2 W	2 W	2 W	2 WNW	1 WNW	1 WNW	1 W	0 SW	0 SW	0 NW		1 NNW				3 SW	2 WSW							
8															2 W	2 NW	3 N							
9									0 WNW				1 S	2 WNW		3 ENE						3 SE		
10											2 NNW				2 WSW	4 S								
11																		2 W						
12										1 SW		2 SSW	2 SSW	2 S										
13														1 ENE	6 SE									
14												1 ENE		1 NNW										
15													1 NNE				3 NNW	2 NNE	2 NNE					
16										1 WNW		2 NW				4 N			2 NNE					
17	0 WSW					1 SW										3 N	4 NE	4 NE						
18																	1 NNW	2 NNW						
19												3 SSW	2 W											
20															1 SW	4 W	4 WSW		2 ESE					
21	1 WSW											4 WSW	4 SW	4 SW	4 W	4 NW								
22									6 SSW	6 SSW		5 SW	7 SW	7 SW	6 SW		5 SW	4 SW						
23											1 NE	1 WNW			3 SW	4 WSW	4 WSW	4 SW		3 SSW				4 S
24														1 NE										
25							6 S	8 S	9 SSW	8 SSW	8 SW	8 SSW	8 SW	8 SW	8 SW	8 SW	7 WSW	3 WNW	0 NE					
26													5 WNW	6 WNW	6 NW		2 W	4 WSW						
27																	5 SW	3 SW						
28				5 S						7 SSW	8 SW	8 SW	8 SW	9 SW	8 SW	7 SW	6 SW	4 SW						
29					4 SSW	4 SSW	5 S		6 SSW	6 SSW	6 SW	8 SW	8 SW	6 SW	6 SW	5 SW	5 SW	3 WSW						
30						3 WNW	4 WNW	3 WNW	2 NW	3 NNE				1 NNW		3 N				0 NW				

(06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB Y CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1 SW												1 WNW	3 SW		3 WSW	3 WSW	3 WSW			1 SSW		1 SSE	
2					2 SSW	2 S	3 SSW			2 SE	4 S	6 SSW	6 S	4 SSW		2 WSW	1 SW	1 SSW					1 SE	1 S
3			2 SW	1 WSW	1 S	2 SW	1 S	1 ESE	1 SW	4 SW	5 SSW	5 SW	8 SW	7 SW	8 SSW	8 SSW	7 SSW	6 SSW	5 SSW	1 SSW	3 SSW	1 S	3 S	4 S
4	4 SSW		3 S	2 SSW	0 SSE	2 SSW	0 SSW	1 SE			3 NW				3 W	1 NE	3 ESE	2 ENE	3 NNW	0 SW	1 W	2 NW	2 NW	1 SE
5							2 SW			4 SW			3 WNW	2 NW	3 WNW	0 NW	2 ESE							
6													4 SW											
7			4 S						6 S		5 SSW	7 SSW	7 SW	7 SSW	6 SSW	7 SSW	7 SSW	4 S	4 SSW		7 S	8 S		
8	4 S	5 SW	7 SSW				2 N	1 NW		3 WSW	4 WNW	1 SE		1 SW		2 N	0 WNW	0 W	2 NW	2 W	1 W	2 W	1 W	1 W
9	0 SW	1 SW	1 WSW				1 SW				0 WNW			3 SW	2 WSW	2 WNW	2 SW							
10										5 SSW	4 SSW	8 SSW	7 S		5 SSW	6 SSW	5 SSW	3 SSW	3 SSW	3 S			4 S	
11	4 SSW	4 SSW		8 S	9 S	9 S	11 S	11 S	9 S	11 S	11 SSW	8 SSW	7 SSW	3 SW	4 WNW		2 E					6 SW	1 WNW	
12											6 SSW	6 SW	4 SW	5 SSW	5 SSW	4 SSW	4 S	4 S	4 SSE		2 NW	1 NNW		1 ESE
13	1 SSE									5 SSW	7 SSW		5 SSW	6 SSW	4 SSW	4 SW	3 SW	1 WSW				4 SW	3 SSE	1 WNW
14	1 N	1 WNW	1 WNW	1 WSW		1 W	2 SSW			3 SSW		4 SW	4 SSW				3 NNW	3 NNW	2 NNW	1 WSW				
15			1 SW			1 S				1 E				2 WNW	3 WNW		2 WSW	1 ESE	1 SE	2 WSW	1 SW	3 ESE		2 SSE
16		4 S	5 S	6 S	6 S		3 S		4 SSW	4 SSW	6 SSW	5 SSW	5 SSW					3 SW	2 SW	3 SW	4 SW	3 SW		
17		1 SW	0 W	0 S						1 SE		0 NE					0 NNE		1 SW					3 NNW
18													1 NNW			1 WNW	1 NW		0 N	2 SW				
19																2 NNW								
20										3 SW			4 SSW	4 SSW	4 SSW	4 SW		4 SSW						
21			1 SSW													3 WNW	4 WNW	2 WNW						
22											1 NNW	3 NNW	3 NNW			2 NNW								
23		0 SW									1 N					4 WNW	3 NW	3 SSW						
24										4 WSW	6 WNW	6 WNW	4 W	2 SW	0 N	1 NW	2 WSW	1 NW	1 WNW	2 N	3 NW	3 NW	3 NW	3 NW
25	2 NW	1 NW			1 NW	1 NW	1 NW								1 SW			4 SSW						
26										6 SSW	5 SSW	5 SSW	5 SSW	5 SSW	4 SSW		2 SSW	1 SSW						
27									4 S	4 SSW	4 SW		7 SW	8 SW	8 SSW	7 SSW	5 SSW	3 SSW				6 SSW	6 SSW	
28								7 SSW	8 SSW	9 SSW	9 SSW	9 SSW	10 SSW	8 SSW	8 SSW	6 S	6 S	9 SSW	3 SSE	4 SSE	7 S	5 S	7 S	7 S
29	4 S	6 SSW						6 SSW	5 SW	8 SSW	6 SW	5 SW		3 SW		1 N								
30																2 NNW	0 NW	0 NW	1 NW	1 NW				
31											0 NNE					0 SSE								

(01/06/83-RPI)

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D           CB-TRACT
WD IN DEGREES AT 10M                                                 TRAILER AA23
WS IN MPS AT 10M                                                      NOV  1981
                                                                     OCCIDENTAL OIL SHALE, INC.

                                                   HOUR (LOCAL STANDARD TIME)

DAY     1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

  1                                                           0     0     2     2     2     3     3     2
                                                             NW    NW   WNW   WNW    NW   WNW    NW   WNW
  2                                                           1     2     2     2     2     2     2     2
                                                             NW    NW   WNW   WNW   WNW    NW    NW    NW
  3                                                           0     1                 2     2     2     2
                                                              N    NW               WNW    NW    NW    NW
  4                                                           1           1     1     3     2     2     2
                                                            ENE           N     N   NNW   NNW   NNW   NNW
  5                                                                 2           3     3     3     3
                                                                   SW         SSW   SSW   SSW   SSW
  6                                                                 2                 2           3     2     1                 0                 2
                                                                    W                SW           W   WNW   WNW               ESE                SW
  7                 0                                   0
                  ESE                                  SW
  8                                                           1                                         2
                                                             NW                                       WNW
  9                                                           1     1                 1     1     1     2
                                                             NE     N               NNW    NW   WNW   WNW
 10                                                           1           1                 1     0     1
                                                              E          SW               SSW    SW   NNE
 11                                                           0     1                             1     1
                                                            ENE     N                           NNW   NNW
 12                                                           1                                         4
                                                              S                                       SSW
 13                                             2     4     2     5     6           7                 4           1                             6
                                               SE     S    SE    SW    SW          SW                SW          SE                           SSW
 14     8     7     5     4     4     6     7     8     8     8     7     7     8     7     8     7     4
        S   SSW     S     S   SSE     S     S   SSW   SSW   SSW   SSW   SSW   SSW   SSW    SW    SW    SW
 15                                                           4                             4     5     4                       0
                                                            SSW                           SSW   SSW   SSW                       S
 16                                                     1     0                       6           3
                                                        E   WSW                      SW         SSW
 17     1                 2                             3           1                 8     7     5     6     5     6     6     6     6     6
       SE                SE                           SSE           S               SSW   SSW   SSW   SSW   SSW   SSW   SSW   SSW   SSW    SW
 18     4     6                       0     1                 3     2     1     5     1     1     1     2     1     2     3     2     1     1
      WNW    NW                       W    SW                 W   NNW   NNW   NNW   NNE   ESE   NNW    NW    NW    NW    NW    NW    NW    NW
 19                                                                 1     1     1     1     1     1     2
                                                                    E     E   ESE   ENE     E    SE   SSE
 20                                                           2     4     4     4     4     1     1     1     1     1     0     1
                                                            SSW    SW   SSW   SSW   SSW   SSW   SSE   WSW   SSE    SE     S   SSE
 21                                                           3           3     3     4     3     4     4
                                                            SSW          SW   SSW   SSW   SSW    SW   SSW
 22                       3     4     4     4     4     4     6                       6           5     4     3     1     2     3     2     2     1
                        SSW   SSW   SSW   SSW   SSW   SSW   SSW                      SW          SW    SW   WSW     W    NW     N   WNW   WNW   WSW
 23     0     0     1     1                             1     3           6     7           8     7     7     6           5     6
       NE   ENE   SSW    SE                           SSE   SSW          SW    SW          SW    SW    SW    SW         SSW   SSW
 24     7     7     7     7     7     6           5     5     8    10     9    10    10    10     9     8     6     6     7     6
       SW    SW    SW    SW    SW   SSW         SSW   SSW   SSW   SSW   SSW    SW    SW    SW    SW    SW   SSW   SSW   SSW   SSW
 25                                                                                       3                 3     2
                                                                                          N                NW   NNW
 26                                                                 1     4     3     2     3     3     2
                                                                   SW   SSW   SSW    SW   SSW   SSW     S
 27                                                           1     4     4     7     3           2     2     2     0     1
                                                            SSW   SSW   SSW    SW   SSW           W   WSW   SSW     W   SSW
 28                                                                 1     1     1     1     0     1     2     1           1
                                                                  NNW   NNW   NNW   WNW   WNW   NNW     W     W           W
 29                                                           0           1                             1           1     1     2     1     1     0
                                                             SW          NE                             W         WNW     W     W   WNW   WSW    SW
 30                                                           1     0           5     7     6     6     5     5     3     2     1           1     1
                                                              W   NNE         WNW   WNW    NW    NW    NW   NNW   NNW    NW   WNW          SW     S

1/06/83-RPI)
```

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB[illegible]Y CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1 SW								3 S	1 S		4 SSW		4 SSW			4 SSW	2 S	0 SE					
2							4 SSW	4 SSW	3 SSW				6 SSW	7 SSW	6 SSW	6 SSW	6 SSW	6 SSW	5 SSW	4 SSW				5 SW
3	5 SW									0 NE	0 NNE	0 NW	2 WNW	1 WNW	3 WNW	2 NNW	2 SSW							
4											2 SE	1 NW	0 WSW	3 SSW	2 SSW	2 SW	1 SSE							
5				0 SSE	1 SE	2 S				2 E	2 SSW	2 SW	3 SSW	3 SSW	4 SSW	4 SSW								
6										2 S		4 SW		6 SW	4 S	3 SSW	2 S							
7											1 SW	3 SW	3 SW	2 SSW	3 SW	3 SSW								
8														3 SW	2 SW	3 SW	2 SSW							
9										2 SE				4 SSW	3 SSW	1 ESE								
10	2 SSE	1 SE	1 ENE							3 SSW	0 W	3 SSW				4 SSW								
11			2 SSW	2 SSW											2 W	2 W	1 WNW	2 NNW						
12									0 ESE							4 SW	2 SSW		1 S	1 S	1 S	1 S		1 SSW
13		0 SSW		1 SSE	1 S		2 WSW	2 NNW	0 ENE	0 NNE	0 NNE	2 NNW	2 NNW	2 WSW	1 W	1 W	2 W							
14							3 SSW	4 SSW	4 SSW	5 SSW	6 SSW	5 SSW		5 SSW		5 SSW	5 SSW	5 SSW			0 ESE	1 SSW		4 SSW
15	4 SSW	4 SSW	5 SSW	4 SSW	6 SW	7 SW	7 SW	5 SSW	4 SSW	5 SSW	6 SSW	6 SSW	8 SW	8 SW	8 SSW	7 SSW	6 SSW	7 SSW	7 SW	5 WSW		1 NNE		
16												1 N		1 NW	1 NNW	2 NNW	1 N	1 SSE		1 NW		0 WSW	1 WSW	2 WNW
17	2 NNW	2 WNW	1 NW		2 WNW		1 SE	1 ESE	1 ESE	1 ESE			2 E	1 ENE	1 ENE	2 E	1 SE							
18											1 SSW	2 SW	3 SSW	3 SSW	3 S	2 SSE								2 S
19	2 S	2 S		1 S	3 SSW	3 S	2 SE	1 SSE	1 SE	2 SSW	2 SW	4 SSW	4 SW	4 SSW	4 SSW	4 SSW	4 SSW	2 S	3 S	3 S	1 SSE		1 S	
20	1 S		1 ESE	1 E	2 ESE	1 ENE	0 SSW	4 SW	5 SW	8 SW	7 SW	8 SW	8 SW	8 SW	6 SW	7 SW	7 SW	8 SW	8 SW	9 SW	10 SW	11 SW	10 SW	9 SW
21	8 SW	5 WSW		2 W	2 WNW	2 WNW	1 NNW	1 W	0 NW	0 NW	1 NW	2 N	1 NW	2 SE	0 NW	0 NNW			1 NW	1 NW	0 NW	0 NW		2 NW
22	3 NW	3 NW	3 NW	2 NW	2 NW	2 NNW	1 NW					0 NW	1 NW	2 NW		1 NNW	3 NNE	2 NNE		1 NNE	1 NNE	1 NNE		
23														1 NNW			1 W							
24										2 S	3 SSW	4 SSW	4 SSW	4 SSW	4 S	4 SSW	4 SSW	2 SSW	5 SSW	5 SSW	5 SSW	4 SSW	4 SSW	5 SSW
25	4 SSW	4 SSW	4 SSW				3 SSW	4 SW	4 SSW	2 SSW	3 SW				6 SW		3 W		4 WNW	5 WNW	4 W			
26	0 SSE	1 S	1 SSW							2 SSW								4 SSW	3 SSW		4 SW	7 SW	8 SW	7 SW
27	7 WSW	3 WNW		2 WSW	4 WNW	1 W	2 W	2 W	3 WSW	3 W	3 NW	4 NW	5 WNW	6 W	5 W	5 WNW	5 W	7 W	5 W					
28												2 NW		4 W			2 S	2 S						
29										4 S	6 S	6 SSW	8 SSW	8 SSW	5 SSW	4 SSW	2 SW	4 S	4 S	4 SSE	1 S	8 SSW	8 SSW	10 SSW
30	7 SSW	3 SSW	4 SSW	9 SW	9 SW	8 SW	8 SW	8 SSW	8 SW	7 SSW	8 SW	8 SW	9 SW	9 SW	9 SW	8 SW	6 SW	3 WNW			4 W	1 WSW	2 W	
31		3 W										1 SE	1 ESE	0 SSW	4 SSW	1 SSW		2 ESE	2 ESE					

(01/06/83-RPI)

HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		1 SW															2 SSW							
2				2 SE		1 SE			2 SSE									3 S	3 S	0 ESE	2 ESE		1 SSE	0 SSE
3		0 SSE			0 SW	1 SSW	1 SSW		0 SW	0 NNE								2 SSW		1 SW	1 SSW	0 SE	0 SE	0 SE
4	0 ESE				1 ESE	1 SE	2 SSE	2 SSE	2 SE															0 SSW
5		0 WSW				3 NW																1 NNW		
6					1 SSW		1 SE	2 SE											1 S	1 S				
7											1 ENE		1 NW					2 SW	1 SW	0 SW	0 SSE			
8		0 SSE								1 SW	0 NNE						1 NW	2 WSW	2 SW	0 ESE				
9																		1 WNW	2 SW	1 SW	0 S	0 E		
10									0 SSE	0 SE								2 WSW	1 SW	2 WSW	1 SW	0 SW		
11			1 SW			0 WSW												2 WSW	2 WSW	1 SW	0 SSW	0 SSW		
12				1 WSW		0 SSW					0 NE							0 W	1 SW	0 SW	1 SW			
13																		1 W	1 W	2 WSW	1 SW	0 S		0 SW
14																		1 SSW	1 SSE			2 SSE	1 S	1 SE
15				1 S	1 SE	1 SE	1 SSE		1 SSW	0 S								1 NNE	1 WSW	1 W	1 SW	1 SW		2 W
16	2 WSW	2 SW	1 SW	1 SW	1 SW	2 SW	1 SW	0 SW	1 SW										1 SW		1 SSE	2 SSE		1 SE
17	1 ESE	1 S	1 SSE	1 S	1 SSW			2 ESE										1 SSW	2 SW	2 SW				0 SW
18	0 SE							0 SSE		1 SW										1 SW	0 SW	1 SW	1 S	1 SSW
19	2 SW	1 SSW	1 SW	1 SW	0 SSE		1 SW		0 SE	1 E									1 SSW	1 SW				
20		1 SSE				1 S		0 ESE	1 WSW									2 N	2 NE	1 WSW	1 SW	1 SW	0 SW	0 SW
21	0 SSE	1 SW	0 S															1 W	1 SW	1 SW				
22	0 SSE							1 SE		0 ENE								1 WSW	1 SW	1 SW	0 ESE			
23																			2 SE				3 SSE	2 SSE
24	1 SE	4 SSW		4 SSW	4 S	3 S	2 S		2 SSE															
25	1 SSW	0 W	1 SW	1 SW		1 WSW	2 WNW	1 SW													0 SW			
26	1 SW	1 WSW	0 SW	2 SW		1 ESE	1 S		0 S															1 SSW
27						1 E	1 SE	1 SSE																
28																		4 S	4 SSE					
29							1 SW																	
30	4 SE	4 SE		3 E	3 E	2 ESE														3 S		2 S		
31			1 SW			2 SW	1 S															2 SW		

/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1				1 WSW									4 N	4 NNW					1 NW	1 NW				
2										1 ENE								4 SSW	4 SSW	0 SSE	1 SSE			1 ESE
3										1 E	1 NNE								2 WSW	2 WSW	1 WSW	0 SSW	1 SW	
4			1 WSW	2 WSW			0 W	1 SW	1 WSW										1 W	2 WSW	2 SW	1 SW		0 SW
5			0 WSW					0 SSW		1 E									2 SSW	1 SSW	1 SSE	1 S	1 S	
6	1 ESE					1 ESE	1 SSE	1 S	2 SSE										1 W	2 SW		0 SW	1 SW	2 SW
7						1 SSW				0 ENE									2 SSW					
8		2 SSW	3 SSW	4 SSW	4 S	3 SSW	4 SSW	4 SSW											4 SSW	4 SW	4 SW	4 SW	3 SSW	1 E
9	2 SSW																							
10																			1 SSW			2 S		
11	2 SSE	3 S	1 SSE	1 SE		2 S	2 S	1 SSE																
12		1 ESE	1 S	1 ESE	1 SE	1 SE		1 S											3 SSW	0 ESE	2 ESE			
13		1 S							1 E											2 ESE	2 SE			2 SSE
14	2 SSE	3 S	1 E	2 ESE	1 E	1 NNE		1 SE											3 SW	1 S	0 N		1 ESE	1 WNW
15	2 WNW				2 ESE	2 ESE		1 WSW											2 W	2 WSW	1 SSW		0 ESE	0 SSE
16	0 SE	1 SE	0 S	1 SW					0 W										2 SSW	1 ESE				
17			1 SE			2 S	1 S	1 S	1 SW	1 NNW									1 WSW	2 WSW	2 SW	0 ENE	1 SW	0 SSW
18	2 SW		1 SE	1 SW	1 S													4 S	4 S	4 SSW	3 SSW		1 E	
19		1 S	1 S	0 SE	0 ESE	1 SE			1 ESE															
20					4 SSW	5 SSW	4 SW																	2 NW
21	1 NW	0 WSW					1 W													2 SW			0 SW	
22	0 SSE			0 E	1 SW			1 SW											1 SW		1 E			
23	1 ESE						1 ESE												2 SSE	2 ESE		2 SE		
24						3 SE	3 SSE	2 SE	2 ESE										4 SSW	4 S	4 SSW		3 SSE	2 ESE
25		4 S	4 S	4 S	3 SSE			3 SSW													3 S	4 SSE	4 SSE	4 S
26	4 SSE	3 SE	3 ESE	2 SE															3 SSW					
27							4 SSW	1 ESE											2 SW				1 SW	0 SSW
28			1 SSW	0 SSW	1 S	2 SE		2 ESE											3 SSW		0 S	0 SSW	0 ESE	1 SW

/06/83-RPI)

```
HOURL, WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E                CB-TRACT
WD IN DEGREES AT 10M                                                      TRAILER AA23
WS IN MPS AT 10M                                                           MAR  1981
                                                                          OCCIDENTAL OIL SHALE, INC.

                                        HOUR (LOCAL STANDARD TIME)

DAY     1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

   1     0                                                 1                                                       3     3     3     2     2     2
       SSW                                                SE                                                     SSE     S     S   SSE    SE    SE
   2     2     2     3     3     3     2     1     2     2                                                             4                 2     2
       SSE    SE     S     S     S   SSE   SSE     S   SSE                                                             S               SSE     S
   3     0     1     0     1     1                       1
         S     E     E   SSE     S                     WSW
   4                                                                                                               0     2     2
                                                                                                                  NW    SW   SSW
   5                                   2                                                                           2     2     1     1     1     1
                                     ESE                                                                           W    SW    SW   SSE    SE    SE
   6                 1     2     0     1     1     0     0                       4                                                     1     2     3
                    SE   SSE   WSW   WSW    SE   WSW     W                     WSW                                                    SE     S     S
   7     3           1     1     1     1     1     1                                                                     2     2     0     1     1
         S           E    SE    SE   ESE     E   ESE                                                                    SW    SW    SW   WSW    SW
   8     0           1                                               0                                                 1           2     1     2
        SW         SSE                                              NE                                                SW         SSE   SSE   ESE
   9     2                 0                 0           0     0                                                 1     2
       ESE               WSW                SE          NE     N                                               NNE   SSE
  10     0           1     0           0                                                                       1     1     1     1           0
         E         SSE   SSE         SSW                                                                     ENE    SW    SW    SW           W
  11                 0     0     1           0                                                                 2     1     0     0
                    SW    NW    SW          SW                                                                 W    SW   SSW   ESE
  12                             1           1                                                                             2     1
                               WSW         SSE                                                                             S     S
  13                                                                                                         2     1     1     0     2
                                                                                                           SSE   WSW   SSW   SSW     S
  14                       1     2           1     1                                                           2     2     2     2     1     0
                          SW    SW         SSW   WSW                                                          NW     W   WSW    SW    SW   WSW
  15     1     1     1           0     1                                                                       2
         S   SSE    SW         SSE    SW                                                                      SW
  16     1                 2     2           3     2                                                                                   1     1
       ESE                SE    SE         SSE    SE                                                                                  SE     S
  17     4                                                                                                           2     1     1     0     0
         W                                                                                                          SW    SW    SW    SW    SW
  18                                         1     1                                                                 1     2     2     2     2
                                            SW    SW                                                                SW   SSW   SSW   SSW   ESE
  19     2     2     2     2     2     1     2     2
        SE    SE    SE    SE    SE    SE    SE     S
  20                 1     3     4     3     4     4                                                                 1     1           1     2
                   SSE     S   SSW     S     S     S                                                               ESE     S          SW     W
  21                                                                                                                 1                 0
                                                                                                                   SSW                SE
  22                                         1     1                                                           1     1     1     1           1
                                           WSW     E                                                         SSW    SE    SE    SE          SE
  23     1     1     0     1     1           1                                                                 1     1
         S     S     E   SSW   WSW         SSE                                                               SSE   SSW
  24                 2                 1     1     1                                                                 2
                     W                SE    SE    SE                                                                SW
  25                                                                                                                       1           2     0
                                                                                                                           S           S    NE
  26     4           5     3     4     2     3                                                                                   4
         S         SSW     S   SSE   SSE    SE                                                                                 SSW
  27                                                                                                                 1     0     0     1     1
                                                                                                                   SSW     W   WSW   WSW    SW
  28           0                                                                                                                 2     2     1
             WNW                                                                                                                 W     W   WSW
  29     2     1           0     1     1     1                                                                       3     4                 2
        SW   SSW         SSE   SSE     S    SE                                                                     SSE   SSE                SE
  30     4     5                                                                     4                               2     2           1     1
       SSE     S                                                                     N                             SSE   SSE         SSE   SSE
  31     1                                         3                                                           4     4     4     2     2     2
       SSE                                       SSW                                                           S     S     S    SE   SSE   SSE

      /06/83-RPI)
```

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 E		4 ENE	3 E															3 SSW	4 S	4 S			
2	4 S						4 S												3 SW		5 S			
3																								1 SW
4	1 SW	1 SW	1 WSW	1 W								5 NNW	4 NNE			4 N					1 SSE	1 SSW		
5												3 SSW	3 SW	3 SSW					3 SSW	2 SE	3 S	2 E	2 E	3 S
6	5 S	1 SE	2 ENE	2 ESE	2 SE														4 SSW	4 SSW		2 WNW	2 W	1 W
7	2 WSW	2 SW	1 SW	0 SSW				1 WNW											0 NE			2 SW	1 WNW	
8																				4 SSW	4 SSW		2 WSW	
9	2 S			2 SE	4 S														4 SSW	4 SSW	4 SSW	5 S	4 S	4 S
10	4 SSE		5 S		3 S	2 SSE		0 E											5 S	3 SSW	3 S	4 S	3 S	
11	3 S	4 SSW	3 SSW		0 WSW	1 ESE	2 SSW												4 WSW		3 SW	3 SW		3 SSW
12	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW												3 SSW	3 S	2 S	2 SE	1 ESE	0 S
13	1 SSW	1 NNE	0 NE	1 E		1 S	0 WNW												3 N	1 ENE	1 SSE			
14																		3 NE	2 NE	2 SSW		3 SSW		
15		1 SSE																			1 ESE	1 SSW		
16					1 SE			1 S											3 SE	3 SSW	4 SSW	4 SSW	3 SSW	
17								1 NE											3 WSW		3 SW			
18							0 WSW																	
19																				3 SW	3 WSW	2 SSE		
20		1 S		0 SSW	1 SSW	1 SSE		0 ENE												4 SW	4 SW	4 SW	4 SSW	
21	1 WSW		0 S				2 SSW																	
22	1 WSW	1 NNW	1 NNW	1 W	2 SW	2 SW	1 WSW													0 E	1 SSW			
23		0 S	1 SSE																2 NNE	1 ENE	1 S			
24								1 ENE																1 ESE
25	0 E																					4 S	3 SSW	3 SSW
26		4 S	3 SSW	3 SSW	5 S	4 S	3 S												4 SSW	4 SSW		3 SSW	4 SSW	
27	4 SW																							
28	1 NW	1 SW		1 W	2 W	2 WSW														1 W	1 WSW	0 SSW	2 SW	
29							0 SSE													1 NNE	2 SW			
30					1 WSW	1 SW	0 W												2 NNE	2 NE				

```
HOUR  WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E          CB-TRACT
WD IN DEGREES AT 10M                                               TRAILER AA23
WS IN MPS AT 10M                                                    MAY  1981
                                                                   OCCIDENTAL OIL SHALE, INC.

                                        HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

   1                             0
                                 W
   2                                                                                    4                             2    1
                                                                                        S                             S    S
   3    3    2    4    1    2    1    1                        3              4         0    1    1    1    1    1    0    1
      SSW  SSE  SSE    W   SE  SSW    E                      NNW             NW        SE   SE    W    W  SSE  ESE  ENE    E
   4    1    1    0         1         0    0    1    1         1    1    2                                  2
        S  SSW   SW       WSW        NE  ENE  ENE    E         N  NNE    N                                  S
   5         1                             2    2         4
            SW                             E  SSE         S
   6         1    1    4         2    2    2
            SE  SSW    W         E  ESE   SE
   7              1    1    1    1                                                                    2              1
                WSW   SW    S  SSW                                                                   SW            WSW
   8         1    0         1              4                             1
           SSW    W         S              W                             N
   9                                                 2    2    2                                            1
                                                     N    N  NNE                                           SW
  10         1    2                        1                                                    3    4    5
           SSE  SSE                      SSW                                                    S  SSW  SSW
  11              5    5    4                   0    1                                  2                        3
                SSW  SSW  WSW                  SE  SSE                                NNW                        S
  12                   1                   1    1    2                                                     2    1         1
                       E                 WNW  NNW  NNW                                                     S  SSW       ESE
  13    1         1    1    1    0    0              1                        2                             2
      SSW       WSW  WSW  WSW  NNE   SW             NE                      NNE                           SSE
  14                        1         2                                                          4    4    3    4    4    3
                          ESE        SE                                                        SSW  SSW  SSW    S  ESE    S
  15    2    3    5         4    4                                       4
      SSW  SSW    S         S    S                                     WSW
  16    3    1    1    1    1    2                                                                             2         1
      SSE  ESE  SSE   SE  SSE  SSE                                                                           SSW         S
  17    1    2    1    0
       SW   SW   SW   SW
  18                                                                                              2                   1    0
                                                                                                SSW                 SSW   SW
  19    0    1    1                   2    2
       SE    S   SE                  SE  SSE
  20                   4    4    2    3                                                                        4         2
                       E  SSE   SE   SE                                                                        S       SSW
  21    4    4    3    4    4         3                                                                   2              1
        S  SSE  SSE    S  SSE        SE                                                                 SSW             SW
  22    3              4    3    3                                       2                   1         2    1    0
      SSW             SW   SW  SSW                                     NNE                 ENE        SE  ESE  ESE
  23         1    1    1                                       2    2    3    3         3    3              1    1    0    0
           SSE    W    W                                      NE    N  NNE    N       NNE  NNE             SE  SSE   SW   SW
  24    0                                  1                                            1    1    3         1    1         1
       SW                                  E                                            E  SSE   SW       SSE    S       SSE
  25    0                   0              0                             4         2                   2                   1
      WNW                  SE            ENE                           SSW        SE                  SE                  NE
  26    0    2    1         1    2    0                                                                        4
      SSW   SW  SSW        SW    S   SE                                                                       SW
  27    3         2    1    2    1                                                                                  2    2
      SSW         S   SE    S  SSW                                                                                 SW   SW
  28    1    2    1    1    1    2    0    1    1    1              1
      SSE    S  SSE    S  WNW  WSW   SE  ENE  ENE  NNE             SW
  29                                                          2    3                        1    1         1    0    0
                                                              N   NW                      ENE  ENE        SE   SE  SSE
  30         1         1                   0    1
             W       SSE                 ENE  NNE
  31         2    2    1    2    1    2    3         4              2    2                        2    2    2         1    2
             S  SSE  WNW    W  ESE  SSW   SW         S            SSW  SSE                      SSW  SSE  SSE        SE   SW

 |/06/83-RPI)
```

HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3														4 NW									1 SE	
4						1 SSW		0 NNE	1 NNW	1 NNE	1 NNE						2 N	2 NNE	2 NNE		1 S	0 SSW	1 WNW	
5		1 S			1 S			0 N		2 N	1 N	2 N				2 NNW	2 NNE		2 NE					
6								0 NNE											4 SW	3 W	0 ENE		2 ENE	2 ESE
7			2 SSE					4 SW											3 SW	4 WSW	3 SSW		2 SW	
8	4 SSW	5 SW	5 SW	4 SW	4 SW	4 SSW	4 SW													4 SW	4 SSW		3 SSW	4 SSW
9	5 SSW			5 SW	4 SSW		1 NNE		3 WNW												0 S	2 SW	2 WSW	1 SSW
10				1 SSW	2 SW		0 WSW																	
11		2 W	2 WSW	2 SW			0 NE			1 N											4 SSW	4 SSW		
12		4 SSW	4 SSW	4 SSW	4 SSW		3 SSW														3 SSW	4 SSW	4 SSW	5 SW
13	4 WSW	3 W	1 NW	1 NNW	4 NW																			
14			1 W	1 SW	2 SW	0 W	2 NW															1 SW		
15	1 SSW			1 SW	0 SSW	1 S	1 E																	0 S
16																								
17							2 W																0 W	0 S
18	1 SW	2 SW	2 SW	1 SW					1 WNW										3 WSW		2 SW			
19			1 SW	1 SSW				1 ENE													2 W	2 WNW	0 SW	0 SSW
20	1 SSW	1 S						0 WNW													2 WSW			2 S
21			1 S		1 SSW			1 NNW													3 NW	1 WNW	1 N	0 SW
22		0 S	2 SSE							2 NE										0 ESE				
23					1 SE				4 SW											1 ESE	1 ESE	1 NE	0 SSW	1 SW
24					1 SW			1 NW												2 NNW	0 SE	1 WSW	0 SSW	
25	0 S				2 SSE			2 W										2 NNE		2 ESE	3 SSE			3 SSE
26	4 SSE	4 SSE	4 ESE	3 E	3 SSE	3 SSE															2 SE	4 ESE		3 S
27	4 SE	3 S				2 E		2 NE	2 SSW												2 S		3 SE	4 SSE
28	3 S	2 SE	0 S	2 SSE	2 SSE			1 ENE	0 SSW				4 SW	2 SSW						2 SSE	3 S	4 S	1 E	
29																								
30																								

HOUR IND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		3 SSE	3 SSE				0 SE	1 NNE														1 SW	1 SW	0 WSW
2							0 WSW		2 WNW	2 NNW		1 NNE	2 NNW						2 NNE			1 WSW	2 WSW	2 SW
3	1 SW	0 SE	0 S	1 SSW	1 SW	0 N	0 SSE								4 SSW				3 NNE			1 ESE	1 SSW	0 NW
4		1 S	1 SW	1 SW				1 ENE	1 N			4 NNE		3 NNE	2 NNW				3 NNE					
5						1 SSE		2 E	1 NE						2 NE	2 NE		3 SSE	2 S	4 SSW				
6									3 SW	5 SW									4 W			2 SE		
7																								
8															2 NNE								2 SSE	2 ESE
9	2 SE		2 ESE			2 SE															4 SE	5 SSE	1 SSW	0 SE
10	1 SSE	1 SE	3 SE				2 E										1 ENE		1 W			1 SSW		
11							2 E							2 NNE	2 ENE						3 ESE	4 SE	2 ESE	0 E
12	1 SSE						1 ESE			2 SSW		1 S									2 SE	1 SSE	3 SSE	4 SSE
13	3 SSE	1 E	2 ESE	3 S	2 S	2 S	1 SSE	1 S												4 S	3 S	1 ESE	1 E	2 ESE
14			0 NNW	1 SW	1 SW	1 S	1 SSE		1 NNE	1 NNE		0 N		1 NE			2 NNW				3 S			
15		1 SW						0 WNW		2 NE	1 NNE						2 NNE	2 NNE		2 E				
16							1 SE									2 NE					1 ESE	2 SSE	3 SSE	1 SSE
17	1 ESE	0 SSE	1 ESE	1 SSE	1 SE	2 SSE	1 SSE	2 S	3 S			3 SE		4 S	4 S	4 S			4 SSE	3 SE	4 SW			
18								1 ESE								3 SSE	3 S	3 WSW		2 SSW			3 SE	
19	1 SSE						2 SE													2 W			1 SW	
20								1 NE	0 W											3 SW	3 SSW			
21	0 S	0 SSW						1 SW											4 SW			2 SW		
22								2 SSW													2 SW			
23	0 SW							0 E									1 SSW				4 SE	3 SSE	1 SE	1 SE
24																						4 SSE	1 SE	3 SSE
25			5 SSE	0 NNE		3 S	1 NW												4 SW	4 ESE	4 SE	1 ESE	1 SSE	0 W
26	1 SE	4 SSE	5 SSE	4 SSE	4 SE	1 ESE	0 WSW														1 ESE		1 SSE	1 SSE
27	1 S	0 NW					1 SE														1 SE			
28								1 ENE																
29								1 E							2 WNW	1 NNW			3 S	4 SSE	4 S	4 S	3 S	
30					4 SSW	0 E															3 SSW		0 NE	0 W
31																								

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB Y CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																				2 SW				
4																				4 SSW	3 SW			
5								1 ENE																
6																			3 NNE	3 ENE	2 E		1 SSW	
7							0 WSW													3 NE	3 ENE	1 ESE	1 SSW	2 SW
8																			2 NNE	2 SE				4 E
9		2 W	3 WSW				2 SW								5 N					4 NNE	2 N	3 NW		
10			0 W	0 W		2 SSW	1 NNW												1 ESE	2 SSE	0 E	0 ESE	0 NNE	
11		1 E	1 S	1 SSW	1 ESE	1 SE	1 S													1 W			2 ESE	2 SE
12	1 SSE	0 SSW	1 SW	1 SW													2 SSW		2 SE	2 SW	1 SSE	2 S		
13						1 S	2 S	2 S	2 SSW	5 SSW	5 SSW			4 SSW							2 SE	2 SSE		1 SE
14	1 SSE	1 ESE	1 SE	1 SE	1 SE	1 ENE	1 ESE	1 E	1 SSW			2 E	2 E	1 NE	2 NW	3 NW				1 SSW	1 S			
15	0 SSW	0 S	0 SSE	1 SSE					1 SW						4 SSW	4 ESE				1 SE	1 S	1 ESE		
16	1 SSW						0 WNW	0 ENE	0 N	1 NNW			3 NW		4 NW					2 SSE			1 SE	
17				1 SW	0 SSW			0 E	0 NNE	1 N	1 N	2 NNW	2 NNW		4 NNE	3 NE	2 N				2 SE	1 SSW	0 S	0 SW
18							0 SW	0 NNW	1 NW	1 N										3 SW				2 S
19								1 E	0 WSW					4 NE	3 NNW					2 WSW			0 NE	2 SSE
20	1 SSE	1 SSE	1 S	1 SSW		0 S	0 ENE		1 N			1 NNE								3 SW	3 SW			
21															3 S		2 ESE		3 SSW	4 S	4 S	3 SSE		
22	2 SSW			1 W	1 SE	3 S	2 SE	1 W												3 SW			1 SSE	1 SE
23	2 SE	2 SSE											4 WNW								1 ESE	2 SE	2 S	
24			1 SSE						1 SSE	1 NE	1 WNW				4 S			1 W	2 SSW	3 ESE	3 SSE			
25									1 ENE		2 NNW		3 NW						4 SSW	4 S		1 S		
26									1 NW	2 NNW				2 NNW							2 SE	1 E		
27				0 SSW	1 SW			1 ESE	1 NE		1 NNE	2 N	2 NNE		1 NE				4 SSW	4 SSW	2 S			
28	0 ESE			1 SE	1 SSW	0 SSE	1 S		1 E	0 NNW	0 SW		4 SSW						3 SW		4 SSW	4 SW		2 E
29			2 ESE	2 E	2 ESE	1 ESE	2 S								2 NE				3 SSE	4 S			3 ESE	1 ENE
30	3 SE	3 SE	5 WSW				4 SSE	3 SSE	4 SSE									4 SE	3 SE	5 S	5 SSE		4 SE	3 ESE
31	3 SE	2 ESE	2 SE					1 ESE	1 SW	5 SSW										4 SSW	1 ENE	3 SSE	2 ESE	2 SE

(01/06/83-RPI)

HO WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1									2 SW										4 SW	4 SSW	5 SSW	4 SSW	4 SSW	4 SSW
2	4 SSW	5 SSW	4 SSW	4 SSW	4 SSW	3 SW	1 SSE	1 SSE		4 SW													4 ESE	3 ESE
3	3 SSE	3 SE	4 ESE	1 ESE	0 ESE	4 SSE		2 E				4 S				2 S	1 S		2 E					
4								1 ESE	1 ESE										3 SW	5 SSW				
5	3 SSE	4 S	3 SSE												4 SW									
6																			1 SSE	2 SSE	0 NNW		0 SE	0 WSW
7											1 N		3 NW	4 NW				0 SW	1 SSE	1 SSW	1 S			
8			1 SSW	0 SW	0 S	0 SE			0 NE	1 N	1 W	3 SW		4 WNW						2 S	3 S	4 SW	1 SE	2 SE
9				0 W	0 ENE	0 SSW	1 SSW	0 S		1 NE							1 E	1 S	1 SW		4 SSE		1 SE	2 SE
10		1 E	1 SSE	1 S	1 SSW		1 SW	1 SSW	1 E	1 NNE		1 NE		2 NW			1 SW	1 ESE	1 S		2 SSW	0 S		
11																			1 S	1 SSW		1 ESE	1 SSE	2 S
12		1 S	1 S						0 NE		2 SSW							3 SE	3 S			4 SE	4 SSE	1 SE
13	2 SE							1 E	2 E	2 ENE	1 N	1 NW	2 NNW			3 E	3 SSE	4 SSE	4 SE	1 SW	2 S			2 SSE
14				1 W	1 SE	1 SSE					0 ESE		1 ENE		3 SSE	4 SSW	4 SSE	2 SE	3 SSW	1 SE	3 SE		0 E	1 S
15					2 SW	0 E			0 NNE	1 N	1 NNE	1 NNE		2 NW	3 NW	3 NNE				1 SSE		1 WSW	0 SW	
16				1 SW		2 WSW		1 WSW	1 NW		1 NW		3 NW	4 NW	3 NNW						0 SSE	0 S		0 ENE
17			0 NW	1 WSW			0 SW		0 WNW	2 WNW	2 NW	2 NNW	2 N	4 NNE	3 N							0 SW	0 SSW	
18	0 SSW				1 SW						1 NW	1 NW	1 WNW	1 NW	1 NNW	2 NNE			3 NNW	2 WSW				
19						2 S	2 SSE		2 SSW	3 SSW	3 SW			3 SSE	4 SSE	4 S		3 S	3 SW	4 SSW	5 SSW	4 SSW	4 SSW	
20																				3 SE	1 SE			3 WNW
21		3 SE	4 SSW	4 S	3 SSE				1 SW	4 SW									3 SW	4 SSW			2 SSE	
22	0 E	2 S	0 SSW		1 S						5 SW								3 SW					
23	2 SSW				1 SE	1 E	1 SSE	1 SE	1 ENE	1 N									4 SSW		2 SE	2 SSE	4 S	
24															1 ESE	2 ENE	1 ENE	1 ENE	2 SSW	1 S	3 S	3 S	2 SE	2 SSE
25	5 S	4 S	3 SSE	2 SSE	4 S	4 S														0 ENE			1 SSW	1 SW
26	1 SW	2 SW	1 W	2 WSW	2 WSW		1 SSW	1 E	0 NE	2 NNW	3 NW	2 NNW				4 NW			3 SW	3 SSW				
27									2 E	2 S	4 SW	4 SW	4 SW	4 SW	4 SW	4 SW			2 SW	2 SSE	2 SSE	3 SSE	4 SSE	4 SSE
28	4 S	4 S	5 S		4 S				5 SSW										3 SW	3 SSW	3 SSW	3 S		3 S
29		4 SSW	4 S	5 S				5 S											2 SW	2 SSW			3 SW	4 SW
30	0 NE	2 SSW	1 E		3 WNW						1 NNE	1 NNE	1 NNE		3 NNW						2 WSW	2 WSW	1 SW	0 SSW

/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB[illegible]Y CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		0 S			0 W	0 SE				1 NNW	2 NNW	2 NNW			4 SW							1 SSW		2 S
2			1 WSW	3 SW															3 SSE	4 S	4 SSE	4 SSE		
3	2 SE	0 S																						
4												1 S												
5	3 SSE		0 NE	2 SSE	2 SE	3 S		0 ESE	0 SSE		4 SW	4 SW						1 SE	2 SSE	2 S				
6	1 SE	1 ESE	1 SE								0 ENE			2 SW	2 SW	3 SW	3 SSW	3 SW			3 SSW	1 S	3 SSE	
7				4 S	5 S	4 S	1 SSE	4 SSW		4 SSW										5 S			4 S	3 SE
8					4 S	2 W									1 ESE									
9				1 WSW	0 SE	0 S		1 WSW	2 NW	1 NW		1 NNE	1 W					3 SW	2 S	2 S				
10				2 S	1 SE	3 S	5 S	3 SSE	3 SSE					5 SSW							3 SSE	3 SSE		
11																		2 SE	2 ESE	2 SSE	1 S			2 SE
12	1 SSE	0 ESE	2 E	0 S	1 NNE	1 ENE	0 SE	1 ESE	1 NNW	1 SW										1 SW				
13		1 SSE			4 S	3 S	2 E		0 SSW										1 W	2 WSW	2 WSW			
14					1 SW			2 S	2 S												1 WSW	2 WSW		1 SW
15	1 WSW	0 SW		2 WSW	2 SW		0 SW	1 SE	1 E		1 NW	3 WNW	3 WNW			3 W							2 SSE	
16	2 SE					2 S		2 SE															3 SSW	3 SSW
17	2 SSW				1 SSE	0 S	0 SSW	0 SE	1 E				1 ENE	1 NE	1 NE	1 NNE				1 SW	0 WSW	0 NW	1 NNW	
18	2 WSW	1 SW	2 WSW	1 SW	1 SW			1 E	1 ENE	0 NNE	1 NNW	1 N			2 NW						0 W	0 SW	0 NNW	
19		1 SW	0 SW								1 NNW		2 N	2 NNW	2 NNW			4 SW	2 SSW		2 ESE			
20									1 SSW										4 SSW	4 SW	2 SSW			
21	1 SE	2 SE		0 SW	1 WSW		1 E		0 NE		2 N	3 NW	3 NNW	4 NW	4 NW				0 NW	2 WSW	3 WSW	2 WSW	2 SW	
22	0 N		0 SW	1 WSW	0 E		0 SW		0 NW	1 NW				2 NNE	2 NNE					1 SSW				
23	0 SW									1 ENE				2 NW	4 WNW				3 SW	1 SW	1 SW			1 SSE
24	1 SE	1 S	1 SSE	1 SW		2 SSW	1 SSW	1 SW	0 S															
25								0 WSW	0 ESE		1 SE			0 NE					5 SSW	5 SSW	4 SSW	1 SSE		1 ESE
26	1 SE	3 S							4 SSW										2 SSE	3 SE			2 SE	2 SSE
27	3 S	2 SE		1 E	4 S	3 SE	2 SE	3 SSW											1 S	0 ESE	2 S			3 SSW
28	1 ESE	4 S	2 SSE	1 ESE	3 ENE		5 SSW																	
29			3 SSW		4 SSE	4 SSW	4 SSW																	
30																					1 NW	1 NW	1 NW	1 NW
31	1 NW									1 ENE		1 ESE	1 ENE	1 NNE					1 SSW	1 SSW				0 S

(01/06/83-HPI)

HOURL WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 SSE							1 S										2 W	1 WSW	1 SW	2 SW			
2	0 S	1 S	1 SW			0 SSW												1 WSW	1 SW	2 SW				0 SW
3			0 SE			0 SW	1 WSW	0 S	1 E									1 W	1 SW	1 SW				
4											1 NNE							0 NNE	1 SSW					
5										1 NE							3 SSW							
6				3 SSW															0 WSW	1 WSW		1 SE	2 S	
7	0 NNW	0 SE		0 E	1 SSE	1 S	1 SE	1 S									3 NNW	1 WNW	1 WSW	1 SSE	1 SSW	1 SW	0 SE	1 SW
8			0 SSW	1 SW	1 WSW	1 WSW	2 WSW	0 SW	0 S									2 NW	1 WSW	2 SW	1 SW		0 SW	0 SW
9			0 SE	1 SW														2 WSW	3 SSW					
10									1 E									0 ESE	2 S		1 SW			
11									1 ESE									1 WSW						
12		0 SE			1 SE				2 E									1 S	2 SSE	2 SE	3 SE	4 SSE	3 SSE	
13	2 ESE			1 ESE		2 SE	2 SSE											1 SSW		2 SSE	0 SSE	1 SE	3 S	
14																		2 SW	1 SSW	2 S	3 SSW	2 W	2 W	1 WSW
15	2 SW	2 SSE	1 SSE	1 S	2 SSE	0 S	1 S	2 S	1 ESE										4 SSW	1 SE	1 SE			
16				3 SSE	1 ESE													3 S	4 SSE	3 SSE	3 SE			1 SE
17		2 ESE	3 SSE				2 SSE	2 S																
18							1 SSW	3 W															0 NW	1 NW
19	1 NW	1 NW	0 NNW		1 NW													3 S	4 S	1 SSE	1 ESE	2 ESE		
20								3 SSE	3 SSE													1 SW	1 ESE	
21			1 SE	1 S	3 SSW		2 SE		3 SSW									3 SSW	3 SSE	3 S	2 SE	1 ESE	3 S	2 SE
22	3 E	2 ENE	1 NE																					
23					2 SE		3 S	3 SSE											5 SW			5 SSW	1 SE	0 SW
24							4 S															4 SSW	3 SW	3 SW
25	4 SW	3 SW	2 SW	3 SW	3 SW	3 SW	2 SW	4 WNW												2 W	0 SW	1 W	0 SW	
26	1 SW		2 S	1 S						0 ENE								2 SE	3 SSE		4 SSE	2 SE	2 SSE	
27			1 SSE	3 S	4 SSE	4 SSE	2 E	2 ENE	1 ESE												3 SSW	3 SSW	3 SSW	
28	2 SSW			1 ESE	1 SSW	1 SSW		1 SW		0 NNE									1 W		2 WSW	0 ESE		1 SE
29	0 SW	0 SE	1 SSE	0 SW	0 WNW		1 W		0 ENE															
30	1 SSE	1 ESE	1 SW	1 SSW	2 S		1 SSE		1 SW													2 W		

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		1 SSW	2 SSW				0 SSE	2 S												2 S	2 S	2 SE	1 SE	2 S
2	3 SSW	1 ESE	1 SE	2 SSE	2 S	3 SSE															4 SSW	5 SW	5 SW	
3		4 SW	4 SW	3 SSW	3 SSW	0 S			2 SSW									2 S						0 SW
4			1 SSE							1 ESE								2 SE	2 SE	1 E	0 NNE	1 WNW		0 ESE
5	1 SSE	1 SSE	1 SE				0 SSE	1 SSE	0 E								3 SSW	3 SSW		1 ESE	2 SE	2 SSE		
6		2 SE							2 E									3 S	3 S	3 S		2 SSE	1 ESE	
7	2 SSE						2 SE			1 ENE							3 SSW							
8		1 SE		1 S						1 E													3 SE	
9					3 SSE												2 SE	4 SSE	3 SSE					
10				1 ESE	1 SE	0 SE	1 S	1 WSW	1 SSE								4 S	4 S	2 S		3 SSE		3 SSE	4 S
11	4 S	5 S			2 W	3 S		1 ESE	1 ESE										0 SW	1 S	0 NW	1 WSW	1 SSW	1 S
12		1 SSE		1 ESE	1 SSE		0 SSW	1 SSW										1 SSW					2 S	
13	0 SE		1 WNW			2 SW												1 WNW	1 SW	1 SW	1 SSW	0 SW	1 SSW	1 S
14		1 WSW	1 E	2 SE	1 SE	3 SSW													4 SW	3 SSW			4 SSW	
15																							3 NNE	3 NNE
16	1 NNE		1 NNE	1 NNE				1 NNE	1 NNE	1 E	1 NE										1 NW			
17				2 W		0 ENE												2 SSW						
18									2 ESE	1 E							3 S	2 SE	1 SE	1 SSE	2 ESE	2 SE	3 SSW	
19			1 S																			1 SSE		1 ESE
20		1 SSE																						
21			2 WNW														1 NW	1 NW					1 NW	
22								1 NNW	1 NW	0 ENE													1 NNE	2 NNE
23	1 NNE									1 NNE	1 NNE							1 SSW	3 S					
24								2 ESE	1 SSE															
25				4 SSW	4 S	4 SSW												1 W				3 W	2 WSW	1 WSW
26				1 SSW	1 S	1 SSE	1 SSW	2 SSW	2 S															
27			2 WSW																	3 W	4 W	0 W	2 WSW	
28	2 SW	2 SW	1 SW	2 SW				1 SW	1 SW	1 SW	1 WNW								2 E	1 SE	3 SSW	4 SSW	4 SSW	4 SW
29	3 SW	2 SSW	4 S	4 SSW	3 SSW	4 S	3 SSE	2 ESE	1 SE															
30																			4 WNW	5 WNW				3 WSW
31	2 W		3 W	3 W	3 W	2 WSW	2 W		1 ESE	1 SE	1 SE									2 SE	2 SSE	1 E	[illegible] E	

(01/06/83-RPI)

```
HOU  WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F                        CB-TRACT
WD IN DEGREES AT 10M                                                           TRAILER AA23
WS IN MPS AT 10M                                                                JAN  1961
                                                                               OCCIDENTAL OIL SHALE, INC.

                                                  HOUR (LOCAL STANDARD TIME)

DAY      1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

  1                  0     0                       0     0                                                     2     2                 1     1     1
                   SSE   SSE                     NNW   WSW                                                    SW   WSW                SW    SW    SW
  2      2     2     1           1           1     2                                                                                   2
         S   SSE   SSE          SE          SE    SE                                                                                 SSE
  3                  1     2                       1                                                                 3
                     S   SSW                      SW                                                               SSW
  4            1     2     2
             ESE    SE   ESE
  5

  6                                0                       1     1                                                             2     1           0
                                 WSW                     ESE     E                                                            SW   SSW           S
  7      1     2     1     1     1     1     0     1     1     1           1                                                                 1     1
        SW   ESE    SE   SSW    SW    SW    SW    SW    SE   ESE           N                                                                SW   WSW
  8      1           0           1     0     1     1     1                                                                   1     0     1     1
       ESE         WNW         SSW   NNW   WSW   WSW     W                                                                 SSW     N     E    SW
  9      0     1     0     0     2     0     1     0     0                                                                                 0
       SSE   SSE     S   NNW   WSW    SW   SSE   SSW    SW                                                                                 W
 10            1     0     0     0     0     0                                                                                                   0
              SW   WSW     W   WSW   NNE   NNW                                                                                                   W
 11      0     0           0                             0     1                                                                         1     0
       ESE     W          NE                           SSW     E                                                                       SSW   ENE
 12      0     1     1           0                             0                                                                   1     1
        SE     S     W         ESE                             W                                                                  SW   SSE
 13      1     1     1     2     1     1     0           1
        SW    SW     W   WSW   WSW   SSW   WSW          SW
 14      0     0     0     1     0     0           1     0                                                           0     1
         S    SE   WSW    SW    SW     S         WSW     W                                                           E     E
 15      1     1     1                                                                                                                 1
         E   ESE    SE                                                                                                                SW
 16

 17                                1                 2                                                                     1     1
                                 SSE               ESE                                                                     S   SSW
 18                  1     2     1     1
                   WSW    SW   SSW   WSW
 19                                          1                                                                         1     1     1     1
                                           SSW                                                                        SW   SSW    SW    SW
 20      1           1     1     1
       ENE          SW    SW   ESE
 21                        1           1     0     0                                                                   0           1     0
                         SSW          SW    SE    SW                                                                   S         WSW   SSE
 22            1     0     1     1     1     0                                                                               0     1     1
              SW   SSE    SW     S   WSW     S                                                                              SE    SW     N
 23            1           0     0     0     1     0     2                                                           2     2     2
              SW          SW    SE    SW   SSE    SW   ESE                                                          SE   ESE   ESE
 24                                                2
                                                   S
 25                                                                                                                  2           0     0     2
                                                                                                                    SW         ESE   WSW   WSW
 26                              0                 0
                                SW               WSW
 27

 28

 29

 30

 31                        2     2
                          SW   SSW
```

```
HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F                    CB-TRACT
WD IN DEGREES AT 10M                                                          TRAILER AA23
WS IN MPS AT 10M                                                               FEB  1981
                                                                              OCCIDENTAL OIL SHALE, INC.

                                              HOUR (LOCAL STANDARD TIME)

 DAY     1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

   1                                                                                                                             1     0     0
                                                                                                                                NW    NE    NW
   2     1     0     1     0     1     0     0     1     2                                                                             1     1
       NNW    NW    NW   NNW    NW    SE    NW    SE   ESE                                                                           ESE    SE
   3     2     2     2     2     2     2     0     0     0                                                                                         0
       ESE   ESE   ESE   ESE    SE    SE    SE   ESE   ESE                                                                                       WSW
   4     1     0                 0
        SW   WNW                 S
   5     0     1           0     0     0     1           0                                                                                     1
        SE   WSW         SSW    SE     W    SW          SW                                                                                   ENE
   6           1     1     1     2                                                                                           2
             ESE    SE   ESE     E                                                                                          SW
   7     1     0     0     1     0           1     0     0                                                             2     1     1     0     2
        SW    SW    SW   SSW   ESE          SW   SSW     E                                                           SSW   SSW   SSW     S   SSW
   8     1
        SW
   9

  10                                                                                                                     1     2           3     2
                                                                                                                         S     S         SSE    SE
  11

  12                                     2                                                                                     1     1     1
                                       SSE                                                                                    SE   ESE     E
  13     0           2     1     2     1     2     2                                                                             2     2
       ESE           E    SE     S    SE    SE   ESE                                                                           ESE     E
  14                                     1
                                        NE
  15                                     1                                                                                     1
                                        SW                                                                                   SSW
  16                             1     1     1     1                                                                       1     2     2     2
                                SW   SSW   SSE   WSW                                                                     ESE    SE    SE   ESE
  17     1     2           1     2
       ESE   ESE         ESE    SE
  18           0                       1     2     1     1                                                                       0           2
              SW                       S     S    SW    SE                                                                       E          SE
  19     1                                   1     2
        SE                                   E   ESE
  20

  21                                                                                                                           1                 0
                                                                                                                              SW                SW
  22           1     1                 0     0                                                                         2           1     1     1
              SW   WSW               SSW   WSW                                                                        SW           E   ESE   ESE
  23           1     2     2     2     2           1     1                                                                   2           2     2
               E   ESE   ESE    SE   ESE           E     E                                                                  SE         ESE   ESE
  24     2     2     1     2     1
       ESE    SE   ESE    SE   ESE
  25     2                       3     3
       ESE                     SSE     S
  26

  27                                                                                                                     2     2     2
                                                                                                                       WSW    SW    SW
  28     1     1                             2                                                                         2
        SW   SSE                            SE                                                                        SW

  (01/06/83-RPI)
```

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		0 SW	1 WSW	0 SSE	2 SW		0 SW	0 SSE																
2																								
3						1 SW	1 SSW	1 WNW																
4																						2 SW	1 SSW	1 SW
5	0 SSW	1 ESE	1 S	2 ESE	2 ESE		2 ESE	2 ESE																
6	2 SSE															3 WSW		2 SSW	2 SSW					
7																								
8		0 SSE			0 SSW	0 SSE	2 SW	0 SSE	0 ESE	1 ESE														
9		0 SE	0 ESE		0 WSW	1 SSE		0 W													2 S	1 SSW	1 SW	0 W
10		1 ESE			1 SSW		1 W	1 W															0 ESE	
11	1 SW	0 ENE				1 WSW																		
12																				2 SSW			0 SW	1 S
13	2 SW		2 ESE	2 SE	2 SE	0 S	2 SE	2 ESE															1 S	0 S
14	0 S	0 SE	1 SW			0 W																		
15				1 SSW			0 S	0 WSW												3 SW	0 SE	1 ESE	0 ENE	2 SE
16		2 ESE	2 SE			3 SE																		
17																								
18																								
19																								
20																						1 SW		
21																					1 SW	1 SSW		1 SW
22	1 SSE	1 SW	2 ESE	2 SE	0 SSW	0 SW																		
23						0 S															1 SSW	0 SW	1 SW	1 ESE
24	1 WNW	1 WSW																			2 SSW	1 S	2 S	1 ESE
25	1 ESE	2 ESE	2 SE	2 ESE	2 ESE	2 SE	2 ESE	2 E																
26																								
27																								
28																								
29			0 SSE																					
30																						1 SSE		
31		2 SSE	2 SSE	2 SSE	3 SSE	3 SSE	2 SSE																	

/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		2 E																				3 SE	2 ESE	3 SSE
2																								
3																								
4																							1 SSW	1 S
5	1 SW	1 SSW		0 SW	0 SW	0 E	2 ESE	2 E																
6																					3 WNW			
7						1 S	1 WNW																	
8																						3 SW		1 SSW
9		2 SSE	2 S																					
10		3 S					2 E																	3 S
11				0 N																3 SW			2 SSW	
12																								
13					1 SSE																	0 NW	1 WSW	2 WSW
14	1 SW	0 S		0 SW	1 SW	1 SW	0 WSW														3 SW			
15																							2 SSW	2 SSW
16	2 SSW	2 SSW	3 SSW	1 SSE		2 SE	1 ESE																	0 SE
17	1 ESE	2 ENE	1 ENE	2 E	1 E	2 ENE	2 E													3 SW		1 SE	1 WSW	0 NNW
18	0 SSW	1 SE	1 SE	2 SSE	1 S	0 W																		
19																							2 SSW	1 SW
20	0 WSW		1 WSW				1 SSW																	2 WSW
21		2 SSW		0 S	1 SSW	2 SSW																		
22																						0 SSE	1 SW	1 SSW
23	1 SW			1 SSW	1 SW	1 WSW	1 ESE															1 SW	1 SSW	1 SW
24	1 SW	1 SSW	1 SSW	0 SSE	1 SSW	1 S	1 ESE													2 SW	3 SSW	1 SSW	0 W	
25		1 ENE	1 E	1 ENE	2 E	2 ENE	1 ESE													3 SSW	3 SSW			
26	2 SSW																				3 SSW			3 SSW
27		2 WSW	0 W	2 SW	0 SSW	0 SSW	0 SE																	
28			2 W																					1 SSW
29	0 S		1 S	1 SW	0 SE	1 WSW																2 SW		
30	1 WSW	1 SW	0 SSE	1 SSW																	2 SSE	2 SSE	0 NW	1 WNW

/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1 WSW	0 SW	1 SSW	1 WSW	0 SW		0 SE																	
2																								
3																								
4																						0 SSW	1 S	0 W
5	0 S		1 SSW	1 SW		2 SSE	0 SE																	
6																								
7							1 SSE														2 SW	1 WSW		
8				1 ESE		0 SE	1 E																	
9																								1 SW
10	1 SW			2 SE	2 ESE	2 SE	1 E																	
11																							3 SSE	1 S
12	1 S	1 SE	0 SSW		1 E	0 NNW	0 NNW																	
13		1 WSW																				1 SW	1 SW	1 SSE
14	2 ESE	2 ESE	2 ESE	1 ESE		1 SE																		
15																								
16																								
17																								
18																				2 SSW	2 SW			
19				2 E	2 ESE	2 SE																		
20																								
21																						3 SW	2 SW	
22		3 SSW	2 SW																					
23																								
24				0 SW	0 SSE	1 SSW	1 E													1 SW			1 S	
25		0 SE	1 SSE	0 SSW		1 SE	1 ESE														1 SSE	2 SSE	2 SSE	
26				1 NW																				
27																								
28																								
29																								1 SW
30	0 SSW		1 SSW		1 SSW	1 SW	0 NW														2 SW	1 SSW	1 SSW	1 WSW
31	1 E																					2 E		

/06/83-RPI)

```
HOUR  WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F                    CB-TRACT
WD IN DEGREES AT 10M                                                         TRAILER AA23
WS IN MPS AT 10M                                                             JUNE  1981
                                                                             OCCIDENTAL OIL SHALE, INC.

                                                HOUR (LOCAL STANDARD TIME)

DAY     1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

  1

  2

  3

  4                                     1                                                                                   0
                                       NE                                                                                  SE
  5     1         0    1         1    0                                                                   1    2    2    2
        S         S   SW        SW   NE                                                                  SE  SSE  SSE  SSW
  6     1    1    0    1    1    2    1                                                                        3
        S  SSE  ESE   SE  SSE  ESE    E                                                                       SE
  7          3         2    2    2    1                                                                        2         2
           SSE         S  ESE    E    E                                                                       SW         S
  8                                                                                                            2
                                                                                                              SW
  9                              1
                                SW
 10     2    2    0
       SW   SW    W
 11                         2    0                                                                  3
                           SW  SSW                                                                SSW
 12                              1
                                 E
 13

 14

 15          0    1
           SSW   SE
 16     0    2    2    0    0    0    0
       SE    S   SW  SSW    S  WSW  ENE
 17                         2    1
                           SW  WNW
 18                         0    1    0    0                                                                  2    1    1
                            S   SW  ENE   NE                                                                SW  SSW  WSW
 19     1    1              1    1    1
        W  SSW            SSW  SSW    E
 20               0    1    0    1    1                                                                        2    1
                 SW   SW  ESE    E    E                                                                       SW  WSW
 21     2    1                   0    0
       SW  SSE                  SE    E
 22                    0    0         0                                                                   2    1    0    1
                      SW  WNW         E                                                                   S  SSW  SSW   SW
 23     1    3    2    1         2    2    1
       SW    S   SE  ESE       ESE    E   NE
 24     2    1    0    1         1    0                                                                                   0
       SW  SSW    W  WSW        SW    E                                                                                  SW
 25          0    0    0         0    1                                                                        2    0
            SW   SW  SSW       WNW    W                                                                        S    S
 26

 27               2    2    3         3
                 SE    E  SSE         E
 28                              2    1                                                                                   1
                               ESE   SE                                                                                 ESE
 29

 30
```

/06/H3-RP1)

HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 SSE			3 SSE	2 SW																			
2																								
3																								
4					0 SE	0 SSE	1 ENE														2 SSE	2 SSE	0 S	0 W
5	0 S	1 ENE	2 SE	2 SE	1 S		1 E														0 SE	2 ESE	3 SE	2 ESE
6	1 E	1 E	2 ESE	2 ESE	3 SE	3 ESE	2 ESE																2 SSW	2 S
7																								
8																								
9		2 SE		2 ESE	3 SE																			
10				2 SE	2 ESE	2 ESE																	2 SE	1 SSE
11	1 SSE	2 ESE	2 SE	2 SE	2 ESE	2 ESE																		
12		1 SW	1 SE	1 S	1 SSW																			
13																								
14	2 SE	1 SE									2 NNE											2 SW	0 SSW	
15	0 SE		1 SW	0 SSW	0 WSW	0 WSW															1 SSE	2 SSE	1 SSW	0 NW
16	2 ESE	2 ESE	2 SE	2 SE	2 SE	2 SE																		
17																						1 ESE	1 SSE	2 ESE
18	2 ESE	1 SE	2 SSW	1 SSE	1 S	2 S	0 S														0 N			1 SSE
19		1 SW		2 SSW	1 SSW																2 SW	1 WSW		
20	1 SSW	1 SSE	1 SW		1 SSE	0 SW	2 ESE															0 W	2 SW	0 SSE
21			0 SSW	0 SW	1 E	1 ENE	0 E													2 SSW	1 SW		1 SW	2 SSE
22	1 SSW	0 SSW		2 ESE	2 SE	1 ESE	1 SE																1 SSW	
23		1 S	1 ESE	1 ESE	1 W	1 S	0 SSE																	
24	2 SE	2 SE	2 ESE	2 ESE	2 SE	2 SE	2 ESE																	
25																								
26																								
27			2 SSE	1 SW	2 WSW	0 S																2 SSE	1 S	0 SW
28	1 SW	0 SSE	1 ESE	2 SE	1 S	1 S	1 ESE													2 SW	2 SW	0 SSE		
29	0 SSW	1 ESE	1 ESE	2 ESE	1 SE	1 SE	1 SSE																	2 S
30	2 SSW	0 SW	1 E	3 SSW			1 E													3 SSW		3 SSW		
31																								

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																					3 SW	1 SSW	0 SW	1 SW
4	2 SSW	1 SSW	1 SSW	1 SSW		1 SW	0 SSE															1 S	1 ENE	2 ESE
5	1 ESE	2 SW	1 S	0 N		0 SSW	0 ESE													2 SW	2 SW	1 SW		0 W
6	1 W	2 WSW	2 WSW	2 WSW	2 WSW	2 SW																1 SE		1 SSW
7	0 WSW	0 S	1 WSW	2 WSW	1 WSW																			
8	0 S	0 WNW	0 S	1 SE	0 W	1 ESE															3 S	2 WNW		
9				2 SW	1 SSE	0 S																		
10		2 S			2 S																			1 SW
11	0 NW																				1 SW	1 SSW		
12					2 SW	1 SW	0 NW																1 S	1 SE
13	2 SSE	2 SSE	2 SSW	2 SW	2 S																		2 SSE	
14																						1 SSW	0 SSW	0 SW
15					1 S	1 SW	1 E	1 ESE															2 SE	2 SE
16		1 SE	0 S	0 SW																	1 S	1 WSW		1 SSE
17	1 SE	1 SSE	0 SSW				1 ESE																	
18	1 SE	0 SSW	1 SW	1 SW	0 SW	0 SE															0 ESE	0 WSW	1 E	
19	2 S	1 SSE	0 ESE	1 ESE	1 ESE	1 SE	1 SE														1 SSW	1 SW		
20					0 SW			1 ENE														2 SSW	0 NNE	0 SSW
21	1 NNW	0 SE	1 E	1 E	1 ENE	2 E	2 E	0 NE															2 SSW	2 SSW
22		2 SW	0 S																		2 SW	1 ESE		
23			2 SE	2 ESE	0 S	1 E		1 NE																1 SSW
24	1 SSW	0 SSE		1 SSW	1 SSE	0 S	1 SE	2 E														2 E	2 SE	2 ESE
25	2 ESE	2 ESE	2 SE	2 SE	2 ESE	1 SSE	0 SSW	1 E		1 N											0 SE		1 SE	2 SSW
26		1 WNW	1 SSE		0 SSE	1 S	1 WSW	1 NW															2 ESE	1 ESE
27	2 S	1 WNW	1 SE			1 SSW	0 ESE			1 N												1 E	2 SE	1 SW
28		0 SSW	0 WSW					1 ENE												3 SSW				
29	1 ESE	2 SSE																			2 S	3 SSE		
30																								
31				2 SE	3 SE	2 ESE	2 ESE																	

(01/06/83-RPI)

HOU WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 ESE	2 ESE	2 ESE	2 ESE	2 ESE	2 ESE	2 E	1 E																
2																								
3							2 SE													3 SSE	3 S		0 SW	0 NE
4	1 ESE	0 SE	1 SE	2 SE	2 SE	2 SE	2 ESE																	
5																								
6																								
7																						1 S	1 SSE	1 SE
8	0 ESE	1 SW					1 ESE	0 E																
9	2 SSE	2 SSW	1 SW																	1 ESE				
10	2 SSW					0 S														1 ESE			1 SSE	1 SW
11																					1 ENE			
12	1 SSW			1 SW	0 E	1 SSW	0 WSW	1 E												2 SSE	1 ESE			
13		2 SE	2 SE	2 SE	2 ESE	0 SSE																2 SE	1 SSE	
14	1 SE	1 S	0 SSW				0 W	1 S	1 SSW													3 SSE		
15	1 SSE	1 ESE	1 ESE	0 SSW			0 WSW																	1 SW
16	1 SW	0 N	0 WNW		1 WSW		1 SW																	
17								0 SE																1 SW
18		1 SW	1 WSW	1 SSW		1 SW		0 NNW	1 NW	1 NW											2 SSW	2 SSW	1 SSW	0 ESE
19	1 E	2 E	2 ESE	2 ESE	2 SE			1 E																1 SSW
20																						3 SSE	1 E	
21						2 ESE	2 ESE	1 ESE													1 WSW	2 SE		2 ESE
22				0 NNE		2 SSE	1 SE	1 E												3 SSW	2 SSW	1 SSE	0 E	0 SE
23		0 SSW	1 E	1 S																				
24																								
25																					2 SW	1 SW		
26						1 ESE																0 SSW	2 SW	1 SSW
27	0 SE	1 ENE	1 ESE	0 SE	0 SE	2 E	2 ESE	2 E																
28						1 NE	1 E	0 S															1 SW	
29	1 SSW																				2 SSW	2 SSW		
30				1 NNW																				

/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB Y CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1			0 S	0 E					1 NNE										3 SW	0 SSW				
2	1 S	2 SSW																						
3																								
4																								
5		2 ESE																			2 S	2 SSW	0 SSW	1 S
6				1 SE	2 ESE	2 ESE	1 SE	1 SE	1 ENE	1 NE									3 SSW	3 SW				2 S
7	0 SSE	2 S																						
8																								
9																					1 SSW	1 S	1 S	2 ESE
10	2 ESE	2 E	2 E																					
11																								
12																								
13			0 WSW	1 SW				2 ESE																
14																								
15																								
16																								
17																								
18						2 SW	0 SW							1 NW										0 SW
19	0 SW			0 SSE		0 S	1 NW	1 E	1 E	1 NNE		2 N								1 ENE		2 E	2 SE	2 SE
20	1 E	2 ESE	2 ESE	1 ESE	1 ESE	2 S	1 SSE	1 ESE														1 E	1 SE	1 ESE
21						0 SW				1 NNW														
22		1 SW				1 WSW		0 ENE													1 SSW	1 SW	0 SSW	
23			0 ESE	0 NNE	0 W	1 SW	1 SSW	1 SSW	1 E													2 SSW	0 S	
24					2 SW																			
25										1 SE													1 E	
26			2 ESE	2 ESE	1 E	2 ESE	2 ESE	1 ESE													2 SE	1 SSE		
27			1 SE																					
28						1 E																		
29				2 ESE																				
30																								
31		1 NW	1 NW	1 NW	0 NW	1 NW	1 NW	1 NW	1 NNW												0 SSW	1 SW	0 NNE	

(01/06/83-RPI)

HOU WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		1 S	1 WSW		1 W	0 SSE	1 W															1 SSW	0 S	0 NNW
2				1 SW	0 SE		1 SW	0 W													1 SSW	0 SW	0 SE	
3	1 SW	1 SW		1 WSW	0 ENE																0 S	0 WSW	1 SSW	1 SW
4	0 S	1 SW	1 W	1 SE	0 SSW	0 SW	1 SW	1 SW	1 E											1 SW	0 SE	1 SSW	1 SW	0 ESE
5	0 SE	1 SSW	1 SE	2 SE	1 SSE	1 ESE	1 SE	1 SE	2 E									2 SSW	2 S	1 SE	1 SSE	3 SE	2 ESE	2 ESE
6	1 ESE		1 SSW		2 SSW	1 SSW	2 SSE	1 ESE	1 ESE															
7																								
8	1 SW	0 E																				0 SW		
9	0 E	0 SSE			1 SW	0 NNW	0 ESE	0 WSW	0 E											1 S	1 SSW	1 S	1 S	2 SSE
10	2 SE	2 SE	1 SE	1 SE	1 SE	2 ESE	1 SE	1 ESE												2 SSW		0 S	0 S	1 S
11	1 S	1 SSW	0 SW	0 SE	1 SW	1 SW	1 SW	1 WSW											1 SW	0 SE	0 NW	0 SSE	0 S	0 SW
12	1 SE		2 ESE	2 SSE		2 SE	2 SE	2 ESE																2 SE
13		2 SE	2 ESE		2 E																			
14																								
15																							2 ESE	1 SE
16		1 ESE	2 SE			2 ESE	1 SE	2 SE														2 SE	2 ESE	
17					2 ESE	2 ESE																		
18																								
19				1 NW		0 NW	0 NW	1 NW	1 NNW	1 E													2 ESE	3 ESE
20	2 SE	2 ESE	2 ESE	2 ESE	1 SE	2 SE	2 SE																	2 SW
21	2 SSW	0 SSE				2 SSW																		
22																								
23						2 SSE																		
24																								
25																								1 ESE
26		1 SSE			1 SW	1 SW	0 E	0 SSW												2 SSE				1 WSW
27	0 WSW	0 SSE																						3 SSW
28		0 S	1 S				1 SSW																1 ESE	
29						1 W																		
30						0 SSW		1 SSW																

/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1				2 SSW	1 SSW																			
2																								
3							1 SE	2 SE											0 ESE	2 SE	1 S	0 WSW	1 SW	
4		0 SE		2 SE	2 SE	2 S	1 S	2 SSE	1 SSE															
5																			2 E				1 ESE	2 ESE
6	2 ESE		1 E	2 ESE	2 SE	2 ESE	2 ESE	2 ESE													1 S			2 ESE
7		2 SE	2 SSE	2 ESE	2 SE	2 SE		2 ESE	2 ESE									3 SSW	2 ENE	2 ESE	2 ESE	2 E	1 ESE	2 ESE
8	2 ESE		1 SE		0 SSW	1 SW		1 ESE	2 ESE									2 SSW	2 SSE	3 SE	3 SE	3 SE		2 SE
9	2 SSE	2 SE	2 SSE	3 SSE		2 SE	2 SE	2 SE	1 SSE											2 SSE	2 SSE	2 SE	1 E	1 ESE
10																				0 E		3 SSE		
11							2 S																	
12	1 SW		2 SW																					
13																								
14	1 SSW																							
15																								
16		2 NNE			2 NNE	2 NNE	1 NNE																	
17																			0 ESE	1 E	1 ESE	2 E	2 E	2 ESE
18	2 ESE	2 ESE	2 ESE	2 ESE	2 SE	2 ESE	2 ESE	3 ESE																
19																								
20																								
21																								
22																								
23		0 NNE	1 NNE	0 NNE	1 NNE	0 NNE	1 NNE	1 NNE	1 NNE											2 SSW	1 SW	0 S	1 S	1 SE
24	2 ESE	2 ESE	1 ESE	0 E	2 ESE	1 ESE	2 ESE																	
25																								
26																								
27																								2 SW
28					3 SW	2 SW	1 SW																	
29																								
30																								
31								2 SW																1 W

(01/06/83-RPI)

INVERSION STUDIES

2.3.6 Inversion Studies

No temperature inversion heights are being measured during the Interim Monitoring Period.

TETHERSONDE
SOUNDINGS

2.3.7 Tethersonde Soundings

No additional studies were conducted during this time period.

AIR QUALITY
ASSURANCE

2.3.8 Air Quality Assurance

2.3.8.1 Quality Assurance Program

The quality assurance program and procedures have been documented in Air Monitoring Quality Assurance Manual and Standard Operating Procedures, Cathedral Bluffs Shale Oil Co., August 1981. This document was submitted in August 1981 to EPA, Region VIII for approval. Copies were also sent to the Oil Shale Office and the Colorado State Department of Health.

These quality assurance procedures define requirements for instrument selection, installation, calibration, maintenance and auditing in accordance with regulations of the Clean Air Act. These procedures are followed by on-site personnel regarding air monitoring equipment. Copies of the quality assurance manual are retained in each air quality trailer for easy reference; these include standard forms for recording calibrations, repairs and data problems.

2.3.8.2 Station "Up-Time" Summaries

For this operational period air quality station AB23 and the co-located 60-m meteorological tower (AA23) have been in continuous operation. Monthly summaries of data acquisition instrument efficiencies (or "up-time") have been included in each air data report. These monthly efficiencies are summarized by instrument or channel on Table 2.3.8-1 for 1982.

2.3.8.3 Air Quality Audit Summaries

Air quality audits have been conducted by either an independent consultant or by CB Environmental Services' Grand Junction Office at Station AB23 since 1976 and are reported on Table 2.3.8-1. In addition, Station AB20 audits began in May 1981, while Station AB26 audits began December 1981. Audit performance goals for the instruments are to achieve values of β within + 10% of unity where

$$C_2 = \beta C_1 + \alpha$$

C_2 = Concentration of gas obtained by audit service
C_1 = Concentration of gas obtained by station calibration
β = Constant = Linear slope of regression line
α = Constant = C_2 intercept of regression line

Thus a β of 1.0 and an α of 0.0 indicate perfect agreement between station and the audit.

In addition, in December 1981 a systems audit was conducted by EPA, Region VIII's independent contractor. Audit recommendations and actions taken by CB were reported in the previous data report.

TABLE 2.3.8-1

Instrument "Up-Time" - Sta. AB23, AA23 - 1982

Channel		Month											
		J	F	M	A	M	J	J	A	S	O	N	D
NO_x		56	44	74	88	88	94	97	95	97	100	90	97
NO		56	44	74	88	88	94	97	95	97	100	90	97
NO_2		56	44	74	88	88	94	97	95	97	100	90	97
O_3		84	95	15	90	88	94	97	95	100	100	98	97
CO		98	97	91	89	87	91	97	82	99	100	97	97
SO_2		96	97	90	79	88	94	97	92	98	99	98	97
H_2S		93	97	80	76	88	94	97	92	98	99	98	97
TSP		100	100	100	100	100	100	100	100	100	100	100	100
Wind Speed	10m	98	97	87	90	88	94	97	98	100	100	95	97
	30m	98	97	87	90	88	94	97	98	100	100	95	97
	60m	98	97	87	90	88	94	97	98	100	100	95	97
Wind Direction	10m	98	97	87	90	88	94	97	98	100	100	95	97
	30m	98	97	87	90	88	94	97	98	100	100	95	97
	60m	98	97	87	90	88	94	97	98	100	100	95	97
Sigma Wind Dir.	10m	98	97	87	90	88	94	97	98	100	100	95	97
	30m	98	97	87	90	88	94	97	98	100	100	95	97
	60m	98	97	87	90	88	94	97	98	100	100	95	97
Temperature	10m	98	97	87	90	88	94	97	98	100	100	95	97
	30m	98	97	87	90	88	94	97	98	100	100	95	97
	60m	98	97	87	90	88	94	97	98	100	100	95	97
Delta Temperature		98	97	87	90	88	94	97	98	100	100	95	97
Relative Humidity		88	91	79	87	78	100	97	99	98	93	100	100
Solar Radiation		98	97	91	90	88	94	97	98	100	100	98	26
Barometric Pressure		98	78	0	0	40	94	97	98	100	100	98	97
Precipitation		88	89	94	100	78	91	88	100	100	53	100	100

TABLE 2.3.8-2 AIR QUALITY AUDIT RESULTS AT C-b TRACT

STATION	INSTRUMENT	β Value (1)														
		12/2/76	4/20/77	8/23/77	11/30/77	3/20/78	6/23/78	9/22/78	12/15/78	3/28/79	6/20/79	9/25/79	12/13/79	3/27/80	6/17/80	5/4/81
AB23	NO	1.370	0.949	1.383	-	1.022	0.942	0.920	0.825	0.809	1.013	0.911	0.971	0.960	1.055	0.985
	NOx	1.250	0.896	1.202	-	0.975	0.912	0.898	0.865	0.768	1.013	0.984	0.962	0.941	1.010	0.948
	NO_2									0.845	1.075	-	0.999	1.042	1.094	1.011
	SO_2	0.989	1.847	0.983	0.992	1.018	1.002	1.088	0.937	0.971	-	1.079	0.918	0.939	1.154	0.919
	H_2S	-	1.715	-	-	1.068	1.020	1.150	0.969	0.952	-	1.064	0.952	0.965	1.359	-
	CO	-	0.974	-	-	1.006	0.953	0.964	1.038	1.062	1.081	1.170	0.939	0.964	1.148	0.910
	O_3	0.917	0.872	0.927	0.932	1.202	0.816	0.831	0.898	0.798	0.924	0.799	0.955	0.866	0.816	1.199
AB20	NO															1.019
	NO_x															0.944
	NO_2															1.025
	SO_2															0.901
	CO															1.007
	O_3															1.010
Audit Agency (4)		NAR														

$C_2 = \beta C_1 + \alpha$

- = Not Calibrated

(1) β = Linear slope of C_2 vs C_1 line

Where C_2 = Concentration of gas obtained by audit service .
C_1 = Concentration of gas obtained by station calibration

STATION	INSTRUMENT	(1) β Value														
		12/28/81	4/1/82	6/15/82	9/28/82	12/12/82										
AB23	NO	1.040	0.974	1.002	1.026	0.995										
	NO_x	1.031	0.980	1.041	1.043	0.995										
	NO_2	(2)	1.023	0.968	0.996	0.987										
	SO_2	0.974	0.998	0.931	0.972	0.893										
	H_2S	Down	1.033	1.007	(5)	(5)										
	CO	0.982	0.974	0.977	1.005	1.022										
	O_3	0.993	0.999	0.976	0.961	0.970										
AB20	NO	Down	(3)	(3)	(3)	(3)										
	NO_x	Down														
	NO_2	Down														
	SO_2	0.942														
	CO	1.005														
	O_3	1.019														
AB26	NO	0.962	0.964	1.017	(3)	(3)										
	NO_x	0.957	0.965	1.042												
	NO_2	(2)	0.979	1.020												
	SO_2	0.989	1.082	0.993												
	H_2S	0.971	1.017	1.039												
	CO	1.049	0.975	1.042												
	O_3	1.022	0.878	0.917												
Audit Agency (4)		CB E/S	CB E/S	CB E/S	APCD	NAR										

(2) Malfunction of gas phase titration channel of the audit device.

(3) Station discontinued.

(4) NAR = North American Rockwell, EPA Contractor
APCD = Colorado Air Pollution Control Division
CB E/S = Cathedral Bluffs Environmental Services Department, Grand Junction

(5) Not Audited.

2.3.8.4 Air Quality Precision Checks

The procedures followed for precision calculations were set forth in the CB Quality Assurance Manual and are identical to those contained in Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), EPA-450/4-80-012, November 1980. The precision probability limits and percentage differences for both gases (automated analyzers) and particulates (manual hi-vol analyzer) are presented in Table 2.3.8-3 for the July - September 1982 quarter.

TABLE 2.3.8-3

Single Analyzer Precision - C-b Tract

Station AB23 | Time Period - July-September 1982

Gas	Instrument	No. of Paired Samples	Mean Difference, $\overline{d}_j$ (%)	Standard Deviation S_j (%)	Upper 95% Limit (%)	Lower 95% Limit (%)	Automated (A) or Manual (M)
SO_2	Teco 43 P.F.	5	4.8	7.5	19.5	-9.8	A
NO_2	ML8840E C	5	4.4	2.3	8.8	-0.1	A
O_3	Dasibi 1003RS UV	5	-2.1	3.0	3.8	-8.0	A
CO	Beckman 866 IR	5	2.1	2.4	6.8	2.7	A
H_2S	Teco 45 PF	5	-1.3	3.3	5.2	-7.7	A
TSP	Hi-vol	6	-2.7	9.6	21.2	-32.2	M

P.F. = Pulsed Fluorescence
C = Chemiluminescence
IR = Infrared
UV = Ultraviolet Absorption

DATA REPORT

2.3.9 Data Reports

This section includes monthly data reports for May 1982 through December 1982, as requird by the Interim Monitoring Plan.

MAY

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-203
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-204
Nitrogen Dioxide (NO_2) at Station AB23 . . . . II-205
Ozone (O_3) at Station AB23 . . . . II-206
Carbon Monoxide (CO) at Station AB23 . . . . II-207
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-208
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-209
Particulates Daily Average at Stations AB23, AB26 . . . . . . II-210

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-211
Wind Speed at Station AA23 - 30 Meter Level II-212
Wind Speed at Station AA23 - 60 Meter Level II-213
Wind Speed at Station AD20 . . . . II-214
Wind Direction at Station AA23 - 10 Meter Level II-215
Wind Direction at Station AA23 - 30 Meter Level II-216
Wind Direction at Station AA23 - 60 Meter Level II-217
Wind Direction at Station AD20 . . . . II-218
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-219
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-220
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-221
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-222
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-223
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-224
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-225
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-226
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-227
Ambient Air Temperature at Station AD20 . . . . II-228
Delta Temperature (60m - 10m) at Station AA23 . . . . II-229
Relative Humidity at Station AB23 - 3 Meter Level II-230
Solar Radiation at Station AB23 . . . . II-231
Barometric Pressure at Station AB23 . . . . II-232
Precipitation at Station AB23 . . . . II-233
Precipitation at Station AD20 . . . . II-234
Precipitation at Station AD28 . . . . II-235
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-236

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-237
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-238
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-239
Ozone (O_3) at Station AB23. . . . . II-240
Carbon Monoxide (CO) at Station AB23. . . . . II-241
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-242
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-243

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-244
Station AA23 - 30 Meter Level II-245
Station AA23 - 60 Meter Level II-246
Station AD20. . . . . II-247

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-248

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-249

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	1	( )	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	9	1	0	0	0	0	0	0	1	1	9
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	11	0	0	0	1	11
4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	5
5	11	0	0	0	0	0	0	7	6	1	0	0	4	0	2	7	6	5	1	0	0	0	0	0	2	11
6	0	0	0	0	0	0	0	0	1	2	0	4	2	1	1	1	2	2	10	7	0	0	0	0	1	10
7	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	2	2	0	1	0	0	0	2
8	0	9	0	0	0	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	0	0	0	0	1	5
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	4	0	0	0	0	0	18	5	9	2	0	5	0	3	18
13	18	40	37	21	21	7	0	(PF)	(PF)	6	1	0	0	0	0	0	0	0	0	0	5	0	0	0	7	40
14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
15	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16	0	0	0	0	0	0	0	1	0	1	2	1	1	4	0	0	0	0	0	0	0	0	0	0	0	4
17	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	1	1	1	4	1	2	1	4
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	( )	2
19	2	2	1	1	4	1	5	4	1	1	1	1	1	1	1	1	1	2	5	6	11	1	1	2	3	11
20	1	1	1	1	0	1	1	5	2	4	2	4	2	2	4	2	2	1	2	1	1	1	2	2	2	5
21	0	1	1	1	1	1	2	2	2	1	2	2	2	2	2	2	4	1	1	1	1	1	1	2	2	4
22	1	1	1	1	1	1	1	1	2	2	1	1	9	6	1	2	4	2	1	1	1	1	1	2	2	9
23	1	1	1	2	1	1	6	6	5	1	4	5	2	4	5	4	4	1	1	1	2	1	1	2	3	6
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	1	6	1	1	1	1	1	2	( )	6
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	4	4	2	5	4	5	9	11	6	6	17	1	1	6	10	6	17
26	5	1	2	2	1	1	2	1	2	1	2	2	2	5	4	1	1	1	1	1	1	1	1	2	2	5
27	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	2	1	2
28	1	1	2	1	4	7	13	11	5	2	2	2	2	1	1	1	5	11	16	23	20	1	1	2	6	23
29	1	1	1	1	1	4	2	1	1	2	2	1	2	1	1	2	1	1	1	1	4	10	1	2	2	10
30	4	1	11	1	1	1	2	7	1	4	5	11	2	7	7	1	1	1	4	6	2	1	1	2	4	11
31	1	1	1	1	1	1	2	1	2	1	2	2	1	1	4	2	2	1	2	5	1	2	1	2	2	5
AV	2	3	2	1	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2	3	2	1	1	2	2	
PK	18	40	37	21	21	7	13	11	6	6	5	11	9	7	7	9	11	18	16	23	20	10	6	10		40

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	8	11	6	4	( )	11
2	6	4	4	4	4	6	4	6	4	8	6	6	9	17	19	28	11	6	4	4	6	4	4	4	7	28
3	6	6	6	4	6	4	4	4	4	4	4	4	4	4	4	4	4	2	2	21	36	4	2	2	6	36
4	4	4	6	4	4	4	4	4	2	2	4	8	4	2	2	2	2	4	4	2	4	4	6	21	4	21
5	60	6	4	4	4	4	4	23	23	8	11	13	15	2	11	30	24	19	8	4	6	4	4	4	12	60
6	4	4	6	4	6	9	6	6	11	11	6	15	15	9	11	9	13	11	38	26	2	4	4	2	10	38
7	4	2	4	4	8	4	4	6	8	6	15	6	4	6	4	4	8	6	9	9	4	8	2	4	6	15
8	4	28	8	4	2	17	6	4	4	4	2	4	4	4	4	2	4	2	2	2	2	4	2	2	5	28
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	2	4	4	2	( )	4
10	2	4	4	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4	2	4
11	8	2	4	2	4	8	4	9	4	4	2	2	2	2	4	2	2	21	21	21	4	8	4	2	6	21
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	17	4	4	4	2	4	53	19	30	13	2	21	4	13	53
13	77	105	94	56	60	26	4	(PF)	(PF)	21	6	4	4	4	4	4	4	4	6	4	23	2	6	2	24	105
14	15	6	2	4	4	2	2	8	8	8	6	4	4	4	4	4	2	2	2	4	4	4	4	6	4	15
15	9	4	2	4	2	9	11	8	9	4	9	6	2	4	9	6	6	4	8	4	4	4	4	6	6	11
16	4	4	6	4	6	6	6	9	6	9	13	9	11	17	4	4	4	4	4	2	4	2	2	4	6	17
17	4	4	2	6	6	4	4	4	4	6	2	2	2	6	2	4	2	2	2	2	2	11	4	6	4	11
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	6	4	4	( )	6
19	8	8	6	4	13	2	13	11	6	2	2	2	2	4	4	2	2	4	17	21	34	6	4	2	7	34
20	4	8	2	2	4	2	4	13	8	8	6	9	6	6	9	8	8	6	8	2	4	2	13	6	6	13
21	4	4	4	4	4	2	8	8	8	4	6	6	6	6	6	4	9	4	4	4	4	2	4	2	5	9
22	6	6	4	2	9	6	2	4	9	6	4	4	26	15	4	6	11	4	4	4	4	2	4	4	6	26
23	4	4	4	13	4	4	15	19	11	4	8	11	8	9	15	9	11	2	2	6	8	6	2	2	7	19
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	4	15	4	4	2	2	2	2	( )	15
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	9	13	6	13	9	15	24	34	17	21	45	2	2	15	30	16	45
26	13	4	9	9	6	2	6	4	9	6	8	8	6	13	9	2	4	4	2	2	2	2	2	2	5	13
27	4	2	2	2	4	2	4	4	2	4	4	4	4	4	4	4	4	2	4	4	4	4	4	4	3	4
28	4	4	4	4	8	21	36	34	15	9	9	9	6	4	4	2	15	32	49	58	53	4	4	4	16	58
29	15	4	4	4	4	15	8	4	4	6	4	2	4	4	4	4	4	4	2	2	13	28	6	8	6	28
30	15	6	32	4	4	4	8	19	4	8	15	30	8	23	21	2	4	2	13	19	2	4	4	2	10	32
31	4	2	8	2	4	2	4	2	6	4	6	4	2	4	9	6	2	2	4	15	2	8	2	2	4	15
AV	11	9	9	6	7	7	7	9	7	6	6	7	6	7	7	7	7	8	9	11	8	5	5	5	8	
PK	77	105	94	56	60	26	36	34	23	21	15	30	26	23	21	30	34	53	49	58	53	28	21	30		105

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	8	11	6	2	( )	11
2	6	4	4	4	4	6	4	6	4	8	6	6	9	11	13	15	9	6	4	4	6	4	4	2	6	15
3	6	6	6	4	6	4	4	4	4	4	4	4	4	4	4	4	4	2	2	11	19	4	2	2	5	19
4	4	4	6	4	4	4	4	4	2	2	4	6	4	2	2	2	2	4	4	2	4	4	6	13	4	13
5	43	6	4	4	4	4	4	11	13	6	11	13	9	2	8	19	15	11	6	4	6	4	4	4	9	43
6	4	4	6	4	6	9	6	6	9	8	6	9	11	8	9	8	9	8	23	15	2	4	4	2	7	23
7	4	2	4	4	8	4	4	6	8	6	11	4	4	6	4	4	8	6	6	6	4	6	2	4	5	11
8	4	15	6	4	2	9	4	2	4	4	2	4	4	4	4	2	4	2	2	2	2	4	2	2	4	15
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	2	4	4	2	( )	4
10	2	4	4	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4	2	4
11	8	2	4	2	4	8	4	9	4	4	2	2	2	2	4	2	2	13	13	15	4	8	4	2	5	15
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	11	4	4	4	2	4	24	11	17	9	2	13	4	8	24
13	49	43	38	24	28	15	4	(PF)	(PF)	11	4	4	4	4	4	4	4	4	6	4	15	2	6	2	13	49
14	13	4	2	4	4	2	2	8	8	8	6	4	4	4	4	4	2	2	2	4	4	4	4	2	4	13
15	8	4	2	4	2	9	9	8	8	4	8	6	2	4	8	6	6	4	8	4	4	4	4	6	5	9
16	4	4	6	4	6	6	6	8	6	8	9	8	9	11	4	4	4	4	4	2	4	2	2	4	5	11
17	4	4	2	6	6	4	4	4	4	6	2	0	0	2	0	2	0	0	0	0	0	6	2	2	2	6
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	4	2	0	( )	4
19	4	4	4	2	8	0	6	6	4	0	0	0	0	2	2	0	0	0	9	11	17	4	2	0	3	17
20	2	6	0	0	4	0	2	6	4	2	2	4	2	2	4	4	4	4	4	0	2	0	9	2	3	9
21	4	2	2	2	2	0	4	4	4	2	2	2	2	2	2	0	4	2	2	2	2	0	2	0	2	4
22	4	4	2	0	8	4	0	2	6	2	2	2	13	6	2	2	6	0	2	2	2	0	2	0	3	13
23	2	2	2	9	2	2	6	9	4	2	2	4	4	4	8	4	6	0	0	4	4	4	0	0	3	9
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	6	2	2	0	0	0	0	( )	6
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	4	8	2	6	4	8	11	17	8	11	19	0	0	6	15	7	19
26	6	2	6	6	4	0	2	2	6	4	4	4	2	6	4	0	2	2	0	0	0	0	0	0	2	6
27	2	0	0	0	2	0	2	2	0	2	2	2	2	2	2	2	2	0	2	2	2	0	2	0	1	2
28	2	2	0	2	2	9	15	17	8	6	6	6	2	2	2	0	8	15	24	23	23	2	2	0	7	24
29	13	2	2	2	2	9	4	2	2	2	0	0	0	2	2	0	2	2	0	0	8	13	4	4	3	13
30	9	4	15	2	2	2	4	8	2	2	8	13	4	11	9	0	2	0	8	9	0	2	2	0	5	15
31	2	0	6	0	2	0	0	0	2	2	2	0	0	2	4	2	0	0	0	8	0	4	0	0	1	8
AV	8	5	5	4	5	4	4	6	5	4	4	4	4	4	4	4	4	4	5	6	5	3	3	2	5	
PK	49	43	38	24	28	15	15	17	13	11	11	13	13	11	13	19	17	24	24	23	23	13	13	15		49

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																									
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	71	65	63	65	65	( )	71
2	61	57	63	67	63	59	51	53	67	71	76	78	78	73	71	61	63	65	53	51	55	63	61	61	63	78
3	65	69	69	63	63	59	55	59	61	63	63	67	73	74	74	73	71	71	73	65	51	59	69	65	65	74
4	51	53	51	47	47	49	45	53	63	65	69	73	73	73	71	65	63	63	55	57	55	53	47	63	58	73
5	45	71	65	67	73	69	67	61	69	118	90	98	96	104	104	96	92	80	84	82	73	74	74	74	80	118
6	67	69	67	74	71	69	63	71	88	90	92	90	90	96	96	98	98	98	84	82	80	80	76	76	82	98
7	76	80	78	71	69	69	63	61	73	78	74	78	76	74	76	71	71	71	65	57	51	47	49	53	68	80
8	47	47	59	57	69	63	59	61	65	78	80	86	98	98	94	92	92	92	88	88	88	84	86	86	77	98
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	82	84	80	69	76	71	69	( )	84
10	65	69	61	73	73	61	65	74	80	84	88	92	92	92	90	88	86	88	88	84	80	69	65	63	78	92
11	51	47	49	43	39	55	47	55	63	71	82	84	86	86	86	86	88	76	73	61	69	57	47	43	64	88
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	49	53	57	61	63	67	73	61	76	71	76	78	67	71	66	78
13	37	33	37	51	51	61	65	(PF)	(PF)	61	65	69	74	76	82	80	78	76	73	71	59	53	43	51	61	82
14	53	51	51	51	49	49	47	61	67	69	73	78	80	78	76	80	78	74	69	63	61	61	55	55	64	80
15	59	55	53	55	57	49	43	53	63	78	84	88	92	90	90	90	94	90	86	76	59	65	65	63	71	94
16	63	65	63	65	49	49	45	57	73	82	86	90	92	86	82	82	86	84	82	74	57	53	53	53	70	92
17	53	49	51	45	47	47	49	51	74	86	86	88	86	86	84	90	92	84	82	78	76	63	73	76	71	92
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	88	78	78	74	74	( )	88
19	69	65	69	59	47	59	51	65	88	106	112	112	118	122	137	135	129	118	102	92	80	84	80	74	90	137
20	74	73	51	51	55	51	61	61	67	67	82	82	90	96	96	102	102	102	90	86	74	78	71	82	77	102
21	82	84	88	82	74	67	63	71	80	94	94	88	92	92	94	96	88	88	86	82	73	73	73	69	82	96
22	69	69	69	71	67	69	65	63	69	82	98	104	92	94	96	98	96	96	100	84	78	76	82	80	82	104
23	78	82	76	73	74	78	59	67	76	80	86	90	96	96	94	98	106	104	104	94	73	80	80	80	84	106
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	73	73	71	74	73	80	80	76	73	( )	80
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	106	102	96	98	92	92	88	80	78	84	78	69	73	76	71	61	84	106
26	63	63	63	61	65	71	53	65	76	80	84	80	82	82	84	86	86	88	86	80	82	84	86	82	76	88
27	73	78	80	80	74	71	76	74	74	73	74	78	84	82	80	80	80	80	78	71	73	69	69	69	76	84
28	63	65	63	61	55	57	65	76	94	98	96	92	90	98	106	106	98	82	78	73	69	78	78	78	80	106
29	59	65	67	69	76	59	53	71	82	86	98	100	102	100	102	102	100	96	90	82	82	84	88	80	83	102
30	73	76	71	71	65	65	63	65	78	78	76	71	78	82	71	80	82	84	82	76	73	71	69	65	74	84
31	65	67	61	67	59	45	45	47	49	71	80	94	92	90	88	90	90	90	90	76	71	67	74	82	73	94
AV	62	64	63	63	61	60	57	62	74	81	83	85	87	88	88	87	87	84	81	75	70	70	69	69	74	
PK	82	84	88	82	76	78	76	76	106	118	112	112	118	122	137	135	129	118	104	94	88	84	88	86		137

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
2	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	43	100
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	100	0	0	0	0	24	100
5	100	100	100	100	100	100	100	100	100	100	100	0	100	0	0	0	0	0	0	0	0	0	0	0	57	100
6	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	100	100	100	100	29	100
7	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	77	100
8	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	0	0	29	100
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	43	100
11	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	100	100	0	0	0	0	0	19	100
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	100	100	100	100	100	100	100	0	0	0	0	57	100
13	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	1	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	0	0	0	34	100
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
19	0	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	43	100
20	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	100	0	100	0	0	0	0	19	100
21	0	0	0	0	100	0	100	0	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	38	100
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	100	0	0	0	0	19	100
23	0	100	100	100	100	100	100	100	100	0	0	0	0	0	100	0	0	100	100	100	0	0	100	100	67	100
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	300	600	200	200	200	( )	600
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	43	100
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	0	29	100
27	0	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	38	100
28	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	100	100	100	100	0	0	0	0	38	100
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	10	100
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	14	28	28	28	32	28	32	37	36	37	35	18	22	35	43	33	29	37	29	45	30	11	19	19	28	
PK.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	300	600	200	200	200		600

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	0	3	3	3	0	3	0	3	3	1	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
5	0	0	0	0	0	0	0	0	0	0	(CA)	0	0	0	3	3	3	0	0	0	0	0	0	0	0	3
6	0	0	0	0	0	0	0	0	0	0	0	0	16	3	3	3	0	0	3	0	0	0	0	0	1	16
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	(MT)	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
20	0	0	0	0	0	0	0	0	0	5	3	3	3	3	5	3	3	3	3	0	0	0	0	0	1	5
21	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3	3	3	0	0	0	0	0	0	0	1	3
22	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
23	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	( )	0
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(MT)	3	5	3	3	5	5	5	8	3	3	10	0	0	0	3	4	10
26	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	5	8	8	0	0	0	1	8
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	
PK	0	0	0	0	0	0	0	3	0	5	5	3	16	5	5	5	8	3	5	10	8	0	3	3		16

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1
5	0	0	0	0	0	0	0	0	0	0	(CA)	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	1	4	3	3	3	3	3	3	1	1	1	1	1	0	1	4
8	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	(MT)	1	0	0	0	0	0	0	0	0	0	0	0	1
13	0	0	0	0	0	0	0	(PF)	(PF)	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	1	1	1	1	0	1	1	1	3
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	3	3	1	0	( )	3
19	0	0	0	0	0	1	0	0	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	1	1
20	0	0	0	0	0	1	1	1	1	0	3	3	3	1	1	1	0	1	0	0	0	0	0	0	1	3
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	( )	0
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(MT)	1	3	1	0	1	1	1	1	4	4	4	3	3	3	3	2	4
26	1	1	0	0	0	0	1	1	1	1	1	1	1	3	1	1	1	0	0	0	0	0	0	0	1	3
27	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
PK	1	1	0	0	1	1	1	1	1	4	3	4	3	3	3	3	3	4	4	4	3	3	3	3		4

PARTICULATE DATA
UG/M3

C-B TRACT
MAY 1982
OCCIDENTAL OIL SHALE, INC.

	STATION				
DAY	AB20	AB23	AB26	AD42	AD56
3	( )	12.5	9.7	( )	( )
7	( )	10.9	11.2	( )	( )
11	( )	11.8	49	( )	( )
15	( )	5.4	( )	( )	( )
19	( )	15.1	16.2	( )	( )
23	( )	15.7	23.5	( )	( )
27	( )	18.4	14.8	( )	( )
31	( )	25.6	19.4	( )	( )
AVE	( )	14.4	20.5	( )	( )
GM	( )	13.3	17.9	( )	( )
PEAK	( )	25.6	49	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	1	1	2	2	( )	3
2	2	1	1	3	2	2	2	2	1	1	1	0	2	3	3	4	1	0	1	2	2	2	2	2	2	4
3	3	4	2	3	2	2	2	3	4	5	5	7	7	7	7	6	5	7	6	4	2	3	4	3	4	7
4	3	3	2	2	1	1	1	1	4	3	4	4	4	4	5	3	4	3	1	1	1	1	3	2	3	5
5	1	2	2	2	3	2	2	3	4	5	6	5	4	4	4	6	5	4	4	2	0	1	(CM)	1	3	6
6	2	1	0	0	0	0	(CM)	1	1	2	2	4	4	4	4	4	4	4	4	1	2	2	1	1	2	4
7	1	0	1	2	0	1	0	(CM)	0	2	3	4	4	4	6	5	3	5	2	2	2	1	2	3	2	6
8	1	2	3	4	5	2	2	3	4	6	6	7	7	7	8	9	9	8	6	6	4	4	7	4	5	9
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	7	5	1	3	4	4	( )	7
10	4	4	1	7	3	2	3	7	8	6	7	7	8	7	7	6	6	4	4	3	0	0	1	1	4	8
11	0	1	1	0	0	1	1	0	1	1	5	4	3	5	1	4	3	2	3	2	2	(CM)	1	1	2	5
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	3	2	2	2	3	3	4	5	5	3	3	5	5	3	5
13	5	4	4	5	6	6	4	(PF)	(PF)	5	4	5	4	5	5	4	3	4	3	2	2	1	1	3	4	6
14	3	2	3	2	2	1	1	1	1	1	3	2	1	1	2	0	2	1	1	2	2	1	1	0	2	3
15	1	1	1	0	0	0	(CM)	(CM)	1	1	2	3	2	4	2	3	2	2	2	1	2	0	1	0	1	4
16	1	0	1	1	1	0	(CM)	1	1	2	3	3	4	3	7	4	2	4	2	1	1	2	2	2	2	7
17	1	(CM)	1	1	0	1	1	1	1	1	4	5	4	3	2	2	4	3	1	2	4	0	0	0	2	5
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	1	1	1	1	( )	2
19	1	1	0	0	0	2	1	4	6	4	7	4	5	4	3	3	3	4	4	2	3	2	2	3	3	7
20	1	1	1	1	0	1	1	2	2	2	2	2	2	2	3	2	2	2	2	1	1	2	0	1	2	3
21	1	0	(CM)	1	1	2	(CM)	1	1	1	2	2	2	2	2	2	3	3	3	1	1	1	(CM)	0	2	3
22	0	0	1	1	0	0	0	0	1	1	2	1	3	2	2	3	5	2	0	2	2	3	2	0	2	5
23	2	(CM)	2	1	1	1	1	1	2	4	4	3	3	3	3	3	4	4	2	0	1	0	1	2	2	4
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	1	4	3	2	3	1	1	1	( )	5
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	2	4	5	5	6	6	6	6	5	4	3	2	2	2	4	4	6
26	2	2	0	0	2	1	1	1	1	2	3	2	2	4	2	3	4	5	4	4	4	4	3	3	2	5
27	0	3	5	5	3	1	5	6	5	5	4	5	6	5	8	6	6	6	6	5	6	4	5	4	5	8
28	1	2	3	4	4	4	4	4	3	2	3	3	4	4	5	5	4	4	4	3	3	1	1	0	3	5
29	0	2	3	2	0	1	0	1	1	1	5	5	6	6	5	6	6	4	4	4	2	1	1	1	3	6
30	1	2	3	3	2	3	2	1	1	1	2	4	5	4	4	4	3	2	1	3	1	1	1	1	2	5
31	2	2	0	1	0	1	0	1	1	1	1	1	2	1	3	2	1	1	1	1	2	0	0	2	1	3
AV	2	2	2	2	2	2	2	2	2	3	4	4	4	4	4	4	4	4	3	3	2	2	2	2	3	
PK	5	4	5	7	6	6	5	7	8	6	7	7	8	7	8	9	9	8	7	6	6	4	7	5		9

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	2	1	3	3	( )	5
2	4	2	3	4	2	2	3	2	1	2	2	0	2	4	3	5	1	0	1	3	3	4	3	3	2	5
3	4	6	3	4	4	3	2	4	6	7	7	9	9	8	9	8	7	10	9	6	2	4	5	5	6	10
4	4	4	3	2	2	1	2	1	5	4	5	5	6	5	8	4	5	5	2	3	1	2	4	4	4	8
5	2	3	3	3	4	3	3	4	5	7	8	6	5	5	6	8	6	5	6	3	1	1	0	1	4	8
6	2	1	0	0	1	0	0	1	2	3	2	5	4	6	5	4	5	6	5	2	3	5	2	1	3	6
7	0	1	1	2	1	2	1	0	0	2	4	5	5	5	8	6	3	7	2	3	3	2	4	5	3	8
8	2	3	5	6	8	4	3	4	5	8	8	9	9	9	11	12	12	10	8	8	6	6	9	5	7	12
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	9	8	2	4	5	6	( )	9
10	7	6	2	10	4	3	4	8	11	8	9	9	10	9	9	8	8	6	6	4	0	0	1	1	6	11
11	1	2	2	1	0	1	1	0	1	1	7	5	4	6	2	6	3	3	4	3	4	1	2	1	3	7
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	3	3	3	4	4	5	7	7	4	5	8	7	5	8
13	7	7	7	8	8	8	6	(PF)	(PF)	7	6	8	6	6	7	6	4	4	4	3	3	2	3	4	6	8
14	4	4	4	3	3	2	2	2	1	2	3	3	1	1	3	1	3	1	2	3	3	2	1	0	2	4
15	2	1	2	0	(CM)	(CM)	(CM)	0	1	1	2	4	2	5	3	3	2	2	2	1	1	0	1	1	2	5
16	1	0	0	1	0	0	0	1	1	3	4	4	4	4	8	5	3	5	2	1	(CM)	2	3	3	2	8
17	1	0	1	1	0	2	2	1	1	1	5	6	6	4	3	3	4	4	2	3	5	0	0	2	3	6
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	1	1	3	0	( )	3
19	1	2	0	1	0	4	1	5	8	6	9	5	7	5	4	4	4	5	5	4	4	3	3	4	4	9
20	2	1	1	2	0	1	1	2	3	3	3	2	2	3	3	3	2	2	3	2	1	3	2	0	2	3
21	0	0	0	(CM)	2	2	0	1	1	1	2	2	3	2	3	3	3	4	4	1	1	1	0	0	2	4
22	(CM)	0	0	0	0	0	0	0	1	2	2	1	3	3	3	4	7	2	0	2	2	4	3	0	2	7
23	2	0	1	0	1	2	1	1	3	4	4	4	3	4	4	4	5	5	3	1	1	1	1	2	2	5
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	2	4	4	2	4	2	1	0	( )	7
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	3	5	6	7	8	8	8	8	7	6	4	3	4	4	6	5	8
26	2	3	1	0	4	2	1	1	1	2	4	3	3	5	3	4	5	6	7	6	8	7	6	5	4	8
27	1	5	9	8	4	1	7	7	7	6	6	7	8	7	10	8	7	8	8	7	8	7	8	5	7	10
28	2	2	4	6	5	5	5	5	4	3	3	3	5	5	7	6	6	5	4	4	4	2	1	0	4	7
29	0	2	3	2	1	0	0	1	1	2	6	7	8	8	7	8	8	6	6	5	3	2	2	1	4	8
30	1	3	4	4	3	4	3	1	1	2	2	6	7	6	5	4	4	3	2	4	2	1	1	0	3	7
31	3	4	1	1	0	2	0	1	2	1	1	1	3	2	3	3	1	1	2	1	2	0	0	3	2	4
AV	2	3	2	3	2	2	2	2	3	4	5	5	5	5	5	5	5	5	4	4	3	3	3	3	4	
PK	7	7	9	10	8	8	7	8	11	8	9	9	10	9	11	12	12	10	9	8	8	7	9	7		12

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	3	1	2	2	( )	6
2	4	4	4	4	2	2	2	2	1	2	2	0	2	4	4	6	2	0	1	3	4	5	4	5	3	6
3	5	7	4	4	5	4	3	4	7	8	8	10	11	9	10	9	8	11	10	7	3	6	7	7	7	11
4	6	6	4	3	2	2	1	2	6	4	6	7	8	7	9	5	6	7	3	4	0	2	4	4	4	9
5	3	4	4	4	5	4	4	4	5	8	8	7	6	6	7	8	7	6	7	4	2	2	2	2	5	8
6	2	1	1	1	1	0	1	1	2	4	3	6	5	6	5	5	6	6	5	3	4	7	2	1	3	7
7	0	2	1	2	2	4	3	1	0	3	4	5	5	5	9	7	4	8	3	4	0	2	5	5	4	9
8	4	4	6	7	9	5	4	4	6	9	9	11	11	10	12	13	13	12	10	10	8	7	11	6	8	13
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	10	9	3	5	7	8	( )	10
10	8	8	4	12	5	4	5	9	13	9	10	11	12	10	10	8	8	7	7	5	0	1	1	2	7	13
11	2	3	3	1	1	1	1	0	1	2	7	6	4	7	2	7	4	3	4	3	4	2	2	2	3	7
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	3	4	5	5	6	8	8	4	6	9	8	6	9
13	8	8	8	8	10	10	7	(PF)	(PF)	8	7	8	7	7	8	7	5	5	4	4	3	3	4	5	7	10
14	6	4	5	4	4	3	2	2	1	2	4	3	2	2	3	1	3	2	2	3	3	2	2	1	3	6
15	1	2	2	1	1	1	1	1	1	2	3	4	3	6	3	4	3	3	3	1	1	1	1	1	2	6
16	1	0	0	1	2	0	1	1	1	4	4	4	5	5	9	5	3	5	3	2	1	2	4	3	3	9
17	1	0	1	2	1	2	2	2	1	2	5	7	7	4	4	4	4	4	3	4	6	2	2	5	3	7
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	1	1	4	2	( )	4
19	0	2	(CM)		1	4	0	5	9	7	10	6	8	6	4	5	4	5	6	4	4	3	4	4	5	10
20	2	2	1	2	0	1	1	3	4	3	3	3	3	4	4	3	3	3	4	3	2	3	3	2	2	4
21	0	1	1	1	1	2	1	1	1	1	3	3	3	2	4	4	4	4	4	2	2	2	1	1	2	4
22	1	1	(CM)	1	1	0	2	1	1	2	2	1	4	3	4	4	7	2	1	3	3	4	3	1	2	7
23	2	1	1	1	1	2	1	1	4	5	5	4	4	4	4	4	5	5	3	2	2	1	2	3	3	5
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	2	5	4	3	6	4	2	0	( )	8
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	3	5	7	8	8	8	9	8	8	7	5	4	5	4	7	6	9
26	2	3	1	1	3	2	1	1	1	3	4	3	3	6	3	4	5	7	8	8	10	9	8	8	4	10
27	3	8	11	10	6	3	8	8	8	7	7	8	8	8	11	8	8	8	9	9	10	8	9	7	8	11
28	3	3	4	7	7	7	6	6	4	3	4	4	5	6	7	7	6	6	5	5	6	3	1	1	5	7
29	1	3	4	3	1	1	1	1	1	2	7	8	8	9	8	8	8	6	7	7	4	3	3	2	4	9
30	2	4	5	5	4	4	3	2	1	2	3	7	8	7	6	5	4	3	2	5	2	2	1	0	4	8
31	3	4	2	1	1	2	0	1	2	1	1	1	3	2	4	4	2	2	2	2	2	0	1	4	2	4
AV	3	3	3	4	3	3	3	3	3	4	5	5	6	6	6	6	5	6	5	5	4	3	4	4	4	
PK	8	8	11	12	10	10	8	9	13	9	10	11	12	10	12	13	13	12	10	10	10	9	11	8		13

WIND SPEED @10M
METERS/SEC

CB TRACT
MRI AD20
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
4	(IM)	(IM)	3	3	3	3	3	2	1	2	3	3	2	1	2	3	3	3	3	2	2	2	1	1	2	3
5	2	1	0	0	0	1	0	2	4	5	5	5	4	4	5	5	4	3	3	2	1	1	1	1	3	5
6	1	2	2	3	2	2	3	2	1	2	3	4	5	5	5	4	4	5	2	2	2	2	2	3	3	5
7	3	4	2	2	3	4	4	3	1	2	3	4	4	3	7	3	3	4	2	2	3	2	3	2	3	7
8	3	2	3	3	2	3	3	4	4	4	5	5	5	5	6	8	7	7	5	4	3	2	4	3	4	8
9	3	3	2	2	3	3	5	6	6	6	6	6	7	7	7	5	4	4	5	4	2	4	3	2	4	7
10	3	2	1	3	2	2	2	4	8	5	5	6	6	5	5	6	4	3	4	3	2	1	1	1	4	8
11	0	1	1	1	0	0	1	1	1	2	5	5	3	4	3	4	3	3	2	1	2	1	0	1	2	5
12	1	1	1	1	2	2	1	1	3	4	2	2	2	1	1	2	(IM)	(IM)	4	4	3	2	3	3	2	4
13	3	2	3	4	5	3	2	(IM)	(IM)	3	3	3	2	3	3	3	3	2	2	1	1	1	1	0	3	5
14	0	0	1	1	0	1	1	0	1	(IM)	2	2	2	2	3	1	2	2	1	1	2	2	2	1	1	3
15	2	1	1	2	1	2	2	1	1	1	2	3	4	4	5	3	3	2	2	2	1	2	2	2	2	5
16	2	2	3	3	2	1	2	2	1	3	3	4	3	5	5	3	2	4	1	2	1	1	1	2	2	5
17	2	2	3	2	2	3	2	3	1	1	3	4	4	2	2	4	5	4	2	1	3	3	3	4	3	5
18	4	4	4	4	5	5	3	2	3	5	5	5	5	4	5	4	4	3	4	1	2	1	1	2	4	5
19	1	2	3	3	2	2	1	5	6	3	5	4	5	6	3	2	4	3	3	2	2	1	2	3	3	6
20	1	1	1	1	2	1	1	1	3	2	3	3	3	4	3	3	3	2	2	2	2	2	2	(IM)	2	4
21	2	2	2	2	1	2	1	2	1	1	2	2	2	2	3	3	2	3	2	1	1	1	2	2	2	3
22	2	2	2	2	2	2	3	1	2	3	2	2	3	4	3	4	4	1	2	1	2	1	2	2	2	4
23	2	2	2	2	2	3	1	2	3	3	4	4	3	4	3	3	3	2	1	2	1	1	1	1	2	4
24	2	2	2	3	3	1	1	2	5	3	3	3	4	3	4	6	2	3	1	2	2	1	1	1	3	6
25	2	2	3	3	3	3	2	2	1	3	4	5	6	7	7	7	5	5	3	2	1	1	1	1	3	7
26	1	2	2	2	3	3	3	3	1	2	3	3	3	3	3	2	3	4	2	2	2	2	2	2	2	4
27	2	3	2	3	2	2	3	6	5	4	4	5	4	4	6	4	4	5	4	3	3	3	3	3	4	6
28	3	2	4	4	2	3	6	4	4	2	3	4	5	3	5	5	5	4	3	2	2	2	2	2	3	6
29	1	1	1	2	2	3	3	2	1	2	3	4	5	4	5	5	5	4	3	2	2	2	2	2	3	5
30	2	2	3	2	1	1	1	1	2	4	4	5	6	5	4	3	2	2	2	2	2	1	1	1	2	6
31	2	1	1	0	0	1	1	2	2	2	1	2	2	3	3	3	1	1	2	2	2	2	3	3	2	3
AV	2	2	2	2	2	2	2	2	3	3	3	4	4	4	4	4	3	3	3	2	2	2	2	2	3	
PK	4	4	4	4	5	5	6	6	8	6	6	6	7	7	7	8	7	7	5	4	3	4	4	4		8

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	191	208	126	122	144	( )
2	170	204	166	157	153	111	99	79	63	50	37	349	249	305	316	308	313	207	176	200	149	140	136	182	154
3	180	184	156	154	155	134	144	194	210	211	212	216	211	218	210	236	221	217	214	247	328	189	186	205	199
4	196	195	151	114	103	122	88	190	225	234	223	263	255	259	227	195	174	188	150	163	137	187	268	315	192
5	322	278	252	255	265	265	279	310	329	337	335	345	338	353	331	320	332	339	335	352	241	236	(CM)	259	306
6	217	211	171	243	165	74	(CM)	48	320	336	318	322	307	297	287	307	297	295	304	242	221	202	72	207	274
7	195	119	205	209	71	185	84	(CM)	304	273	281	281	250	270	252	217	253	264	91	114	123	71	144	163	204
8	122	301	271	189	227	270	124	118	167	212	214	208	213	193	179	172	175	169	177	178	182	180	186	216	191
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	211	223	239	176	162	164	158	( )
10	153	173	140	177	178	113	162	172	186	191	188	208	207	209	210	238	249	233	229	261	0	149	165	60	188
11	291	237	270	256	309	336	14	343	75	157	235	230	207	237	188	247	192	335	312	314	286	(CM)	246	232	265
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	285	304	258	251	269	278	273	317	303	309	299	289	331	339	293
13	321	316	318	323	323	327	343	(PF)	(PF)	331	343	41	39	44	38	35	29	10	8	344	313	244	275	282	343
14	303	302	299	297	288	270	268	300	315	347	15	14	30	79	73	17	259	76	70	135	172	131	204	229	325
15	112	219	239	95	232	225	(CM)	(CM)	352	2	312	39	142	209	332	357	356	11	336	264	216	201	216	192	268
16	169	246	158	164	246	214	(CM)	341	349	328	317	334	314	326	349	15	12	350	32	43	230	237	235	227	303
17	188	(CM)	188	225	83	121	115	56	10	20	209	205	238	268	205	245	129	120	124	149	173	355	71	205	162
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	59	203	27	289	180	( )
19	214	228	240	220	121	132	330	299	272	230	201	196	195	284	291	231	248	290	300	310	321	341	358	356	264
20	7	319	221	251	139	241	262	321	340	355	299	338	320	328	314	313	306	348	339	2	159	181	186	221	302
21	216	233	(CM)	233	262	236	(CM)	4	357	321	350	357	339	312	345	351	335	352	2	15	161	184	(CM)	201	314
22	207	143	230	233	27	113	156	9	341	348	359	259	325	320	72	352	333	0	22	267	229	210	214	171	303
23	217	(CM)	223	184	225	147	297	319	359	5	334	341	337	321	330	314	338	16	27	331	292	323	233	235	310
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	293	289	350	34	10	44	59	188	214	( )
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	53	309	307	286	300	290	302	323	312	297	305	295	222	250	274	305	297
26	274	214	176	209	129	152	53	45	339	314	287	308	315	305	323	209	217	225	211	192	197	193	193	191	230
27	68	183	202	198	200	143	196	190	192	197	203	204	210	200	176	177	180	182	177	176	180	177	174	172	184
28	114	95	145	162	191	329	320	315	326	341	342	332	274	236	226	228	282	319	313	330	316	235	234	235	283
29	250	237	226	227	126	220	66	75	17	356	213	208	219	219	218	236	204	180	175	198	281	323	44	130	213
30	307	327	291	265	271	256	285	298	354	328	333	328	272	305	328	8	27	33	344	304	270	229	209	183	304
31	166	156	207	126	231	92	243	47	343	351	3	297	11	284	329	324	13	22	265	326	189	67	171	162	325
PV	206	223	212	207	194	177	72	357	339	322	295	295	274	277	285	286	285	314	317	278	221	197	201	206	264

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	188	221	155	115	138	( )
2	165	184	187	159	146	115	102	82	66	50	40	339	251	303	313	310	315	220	165	193	147	145	152	189	158
3	187	187	166	162	164	148	154	197	212	214	214	217	213	220	212	238	221	220	215	249	324	193	190	211	203
4	201	200	168	141	117	136	94	199	227	235	225	267	261	263	230	197	175	188	163	169	135	205	279	327	198
5	330	293	270	273	275	280	284	309	327	337	333	343	336	351	329	319	331	338	333	353	351	275	8	319	320
6	243	225	207	308	227	81	149	49	316	333	317	321	305	297	285	305	293	294	302	259	232	202	51	203	280
7	171	88	169	217	177	202	192	229	270	273	285	281	247	267	251	221	256	267	94	114	121	71	129	158	207
8	169	289	270	195	231	270	121	120	169	214	216	210	215	195	181	173	176	170	179	180	185	183	188	218	195
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	215	225	242	189	168	166	155	( )
10	150	168	162	176	178	114	158	172	188	192	189	209	209	210	211	240	252	234	231	261	307	34	180	64	194
11	327	267	307	303	351	338	6	349	79	163	238	232	208	239	190	249	194	337	312	321	294	47	285	268	290
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	287	307	263	255	272	280	277	317	304	311	307	295	333	341	296
13	322	318	319	324	323	327	343	(PF)	(PF)	331	342	40	41	45	39	34	30	9	7	346	320	273	286	286	344
14	304	306	305	303	291	286	279	298	321	344	17	15	35	81	70	9	259	69	68	120	145	138	165	302	343
15	103	132	267	101	(CM)	(CM)	(CM)	270	350	0	311	41	142	209	333	355	358	11	336	297	248	265	215	197	312
16	197	328	115	148	121	245	261	338	346	327	318	332	313	325	348	13	14	351	33	44	(CM)	278	255	241	326
17	211	63	161	246	42	111	120	60	9	21	211	206	243	270	210	243	129	119	126	140	167	211	153	185	164
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	71	200	34	307	102	( )
19	205	226	261	295	76	118	325	297	269	231	202	197	198	289	286	227	247	287	299	309	319	343	356	356	274
20	5	324	243	293	121	291	272	320	338	355	298	335	319	326	313	311	306	346	336	4	115	151	155	194	317
21	270	287	11	(CM)	284	251	289	0	349	321	344	355	337	311	343	349	332	352	1	9	104	134	106	337	337
22	(CM)	201	240	251	355	48	98	9	342	347	355	257	325	312	73	351	332	359	25	294	256	217	222	168	320
23	223	0	256	185	260	142	325	315	1	4	332	340	333	322	328	315	336	15	24	348	338	6	270	261	325
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	292	286	349	33	13	43	58	143	238	( )
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	51	306	305	284	298	287	301	321	309	294	303	296	237	264	286	307	297
26	287	225	199	311	118	127	83	56	338	310	286	305	312	302	319	211	220	226	213	196	198	194	197	191	240
27	196	193	206	201	203	178	196	190	193	198	205	207	212	200	176	177	181	182	178	175	180	180	176	174	190
28	130	101	141	162	187	330	317	312	325	336	338	329	270	237	228	229	284	317	312	329	323	270	276	307	292
29	289	250	246	253	198	270	74	81	31	1	215	211	220	220	220	237	206	180	174	191	286	322	43	92	229
30	329	335	296	270	278	266	284	298	358	328	333	328	274	302	326	8	28	33	339	305	279	236	219	161	308
31	157	148	176	87	22	101	204	55	346	352	358	281	8	288	330	324	16	22	265	330	156	48	159	155	19
PV	222	241	224	230	200	189	209	338	337	320	294	293	274	277	284	286	285	313	313	292	233	210	201	216	279

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	187	229	210	122	144	( )
2	166	180	197	169	167	130	104	84	73	60	45	0	253	308	319	319	324	256	156	181	148	151	164	197	159
3	194	191	173	170	173	165	166	199	212	215	215	217	213	221	214	238	222	222	216	249	313	198	195	214	207
4	208	207	181	172	153	166	111	205	227	238	227	268	263	264	230	202	178	188	176	179	189	233	286	339	209
5	346	317	294	294	294	305	299	318	334	342	340	348	342	356	334	325	338	342	338	355	9	314	15	338	332
6	282	270	262	315	278	230	199	65	323	338	323	327	311	304	290	311	298	299	308	279	255	218	43	281	294
7	0	55	152	227	209	214	207	224	249	281	287	285	252	273	257	224	256	263	110	120	0	71	121	163	232
8	190	290	274	204	233	267	121	124	173	215	216	211	215	197	183	175	177	173	181	183	187	187	191	217	198
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	213	223	242	200	170	169	156	( )
10	153	166	170	176	180	125	163	174	189	194	191	209	209	209	211	239	250	233	231	254	231	14	197	73	196
11	333	297	329	333	354	351	4	4	84	172	236	230	208	238	196	247	198	343	320	333	309	59	305	285	304
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	298	315	283	274	289	295	289	323	313	318	313	311	341	347	308
13	330	328	328	331	330	333	349	(PF)	(PF)	337	348	44	47	51	46	40	35	16	13	351	332	299	300	302	352
14	316	318	320	315	305	309	295	302	338	349	22	20	44	89	76	11	257	78	73	112	134	126	137	280	0
15	110	111	251	317	272	349	292	253	356	7	319	43	148	209	336	0	4	16	341	321	309	306	140	235	326
16	221	279	59	145	112	250	263	335	354	334	324	338	321	331	352	19	18	355	39	57	73	315	277	268	339
17	255	55	160	221	216	106	123	79	12	18	212	207	243	268	217	244	134	124	131	139	161	186	191	186	176
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	89	201	40	329	58	( )
19	233	247	(CM)	308	84	111	341	304	274	233	204	198	199	287	291	234	254	292	304	314	325	350	2	360	283
20	10	338	279	312	63	331	299	331	344	357	307	337	327	333	319	315	307	350	340	5	100	140	150	171	336
21	315	7	40	103	270	268	266	12	356	328	346	353	341	319	349	351	339	357	8	17	83	122	114	55	358
22	19	172	(CM)	266	289	304	59	52	358	355	4	259	330	316	79	356	337	4	24	306	289	232	236	217	328
23	214	3	315	279	274	141	312	329	7	8	337	344	337	327	333	322	343	19	27	357	354	12	318	288	335
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	298	289	355	36	17	45	56	125	348	( )
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	50	311	310	291	302	293	307	326	314	300	310	304	270	282	303	317	307
26	302	243	240	323	111	132	185	74	346	315	292	311	314	307	322	211	222	226	213	202	204	201	205	195	246
27	198	199	211	205	207	188	197	191	196	199	207	209	213	201	177	178	184	183	178	176	181	184	178	178	192
28	155	115	148	169	191	336	321	317	331	339	341	332	278	242	229	230	285	323	318	332	331	300	313	344	301
29	353	269	269	281	232	290	66	100	48	13	217	212	220	221	221	235	208	183	176	187	296	328	43	67	243
30	356	347	308	281	294	284	292	309	2	331	339	334	281	306	330	13	33	37	338	313	282	242	235	35	322
31	158	143	152	82	100	104	169	74	347	352	354	287	11	298	332	330	22	27	263	342	145	304	159	149	37
PV	265	271	243	256	229	251	252	360	346	325	300	298	279	281	289	291	289	319	319	305	265	252	199	260	291

WIND DIRECTION #10M
DEGREES

CB TRACT
MRI A020
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
4	(IM)	(IM)	116	121	118	125	122	90	334	260	283	78	22	199	234	113	75	63	74	80	98	91	272	239	146
5	286	284	151	183	125	98	66	298	294	296	310	319	311	309	289	287	303	316	307	16	132	100	146	151	224
6	87	92	107	120	115	106	120	111	237	252	261	266	285	279	281	267	274	270	282	57	84	95	105	111	178
7	122	123	120	108	103	126	123	120	44	280	269	256	215	268	241	204	257	178	96	114	118	111	115	107	159
8	114	101	226	109	202	305	126	91	107	176	171	202	193	170	139	130	133	124	118	113	105	102	133	215	150
9	114	117	111	100	101	118	139	158	160	161	178	164	158	171	157	195	246	196	227	233	80	122	97	86	149
10	105	349	76	106	101	102	92	115	141	156	172	188	173	197	197	234	259	256	232	270	288	332	101	92	181
11	186	143	102	102	93	273	283	279	103	96	241	217	131	193	121	238	296	346	334	320	316	109	250	134	204
12	94	80	107	316	296	293	251	275	270	244	281	286	235	340	285	292	(IM)	(IM)	278	272	282	296	299	300	258
13	289	288	294	295	292	297	304	(IM)	(IM)	291	323	62	34	47	20	7	327	336	320	331	72	113	93	243	213
14	93	190	276	34	357	71	109	140	226	(IM)	19	2	136	119	70	195	231	76	101	108	96	93	103	96	128
15	105	92	92	96	95	92	113	101	273	264	253	9	348	243	313	0	350	347	337	34	82	100	114	114	165
16	115	97	120	120	102	88	102	119	69	259	290	280	313	283	331	3	161	346	3	21	90	167	99	98	153
17	104	116	126	91	100	115	122	125	111	240	222	189	233	279	206	241	111	86	98	85	113	114	119	121	144
18	119	115	117	114	122	119	117	120	96	95	133	160	172	166	157	175	172	194	287	82	2	150	106	107	133
19	110	104	122	110	114	121	103	260	283	236	150	157	195	268	274	244	252	262	293	283	313	298	304	315	215
20	270	308	86	86	115	95	116	236	299	277	270	277	263	263	258	270	270	290	311	39	102	117	112	(IM)	206
21	83	101	106	87	119	90	87	79	287	281	268	273	282	269	269	296	311	326	342	54	116	64	96	96	183
22	94	95	93	93	92	96	117	100	284	277	280	262	321	106	97	309	313	299	54	66	95	80	93	95	159
23	88	87	96	102	108	118	86	42	335	335	317	301	288	291	296	304	311	357	357	42	122	121	120	107	197
24	97	96	102	122	122	94	82	245	264	264	307	280	318	355	322	274	270	323	9	9	3	59	83	95	175
25	101	111	118	116	123	121	110	120	143	273	289	278	276	282	275	292	274	284	281	305	96	93	148	94	192
26	97	89	90	93	102	121	120	121	304	301	269	279	269	279	241	220	169	222	202	101	87	85	83	79	168
27	98	94	94	100	80	113	108	134	159	157	181	167	196	202	146	159	177	140	131	109	93	98	87	100	130
28	104	87	115	114	93	302	299	280	300	268	274	285	277	269	230	253	289	299	298	341	95	101	113	120	217
29	101	71	91	99	122	118	122	124	103	264	283	194	216	188	212	230	201	137	124	75	302	94	98	105	153
30	142	271	264	277	311	91	33	166	205	266	274	290	275	289	312	358	23	354	300	254	240	280	100	110	228
31	104	101	173	0	0	91	137	225	272	279	262	283	263	309	282	272	263	235	329	19	102	102	116	114	181
PV	127	141	132	122	137	139	133	158	211	243	244	214	228	237	223	216	234	247	219	137	133	132	132	135	178

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	191	208	126	122	144	****	****
2	170	204	166	157	153	111	99	79	63	50	37	349	249	305	316	308	313	207	176	200	149	140	136	182	163	0.4
3	180	184	156	154	155	134	144	194	210	211	212	216	211	218	210	236	221	217	214	247	328	189	186	205	208	3.8
4	196	195	151	114	103	122	88	190	225	234	223	263	255	259	227	195	174	188	150	163	137	187	268	315	212	1.7
5	322	278	252	255	265	265	279	310	329	337	335	345	338	353	331	320	332	339	335	352	241	236	***	259	322	2.8
6	217	211	171	243	165	74	***	48	320	336	318	322	307	297	287	307	297	295	304	242	221	202	72	207	291	1.5
7	195	119	205	209	71	185	84	***	304	273	281	281	250	270	252	217	253	264	91	114	123	71	144	163	234	1.3
8	122	301	271	189	227	270	124	118	167	212	214	208	213	193	179	172	175	169	177	178	182	180	186	216	191	4.5
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	211	223	239	176	162	164	158	****	****
10	153	173	140	177	178	113	162	172	186	191	188	208	207	209	210	238	249	233	229	261	0	149	165	60	199	3.8
11	291	237	270	256	309	336	14	343	75	157	235	230	207	237	188	247	192	335	312	314	286	***	246	232	250	1.3
12	***	***	***	***	***	***	***	***	***	***	285	304	258	251	269	278	273	317	303	309	299	289	331	339	301	3.1
13	321	316	318	323	323	327	343	***	***	331	343	41	39	44	38	35	29	10	8	344	313	244	275	282	349	3.2
14	303	302	299	297	288	270	268	300	315	347	15	14	30	79	73	17	259	76	70	135	172	131	204	229	323	0.6
15	112	219	239	95	232	225	***	***	352	2	312	39	142	209	332	357	356	11	336	264	216	201	216	192	314	0.3
16	169	246	158	164	246	214	***	341	349	328	317	334	314	326	349	15	12	350	32	43	230	237	235	227	330	1.2
17	188	***	188	225	83	121	115	56	10	20	209	205	238	268	205	245	129	120	124	149	173	355	71	205	187	1.0
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	59	203	27	289	180	****	****
19	214	228	240	220	121	132	330	299	272	230	201	196	195	284	291	231	248	290	300	310	321	341	358	356	261	1.8
20	7	319	221	251	139	241	262	321	340	355	299	338	320	328	314	313	306	348	339	2	159	181	186	221	314	1.0
21	216	233	***	233	262	236	***	4	357	321	350	357	339	312	345	351	335	352	2	15	161	184	***	201	332	1.0
22	207	143	230	233	27	113	156	9	341	348	359	259	325	320	72	352	333	0	22	267	229	210	214	171	313	0.6
23	217	***	223	184	225	147	297	319	359	5	334	341	337	321	330	314	338	16	27	331	292	323	233	235	328	1.3
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	293	289	350	34	10	44	59	188	214	****	****
25	***	***	***	***	***	***	***	***	53	309	307	286	300	290	302	323	312	297	305	295	222	250	274	305	299	3.7
26	274	214	176	209	129	152	53	45	339	314	287	308	315	305	323	209	217	225	211	192	197	193	193	191	227	1.4
27	68	183	202	198	200	143	196	190	192	197	203	204	210	200	176	177	180	182	177	176	180	177	174	172	188	4.6
28	114	95	145	162	191	329	320	315	326	341	342	332	274	236	226	228	282	319	313	330	316	235	234	235	284	1.6
29	250	237	226	227	126	220	66	75	17	356	213	208	219	219	218	236	204	180	175	198	281	323	44	130	214	2.2
30	307	327	291	265	271	256	285	298	354	328	333	328	272	305	328	8	27	33	344	304	270	229	209	183	309	1.7
31	166	156	207	126	231	92	243	47	343	351	3	297	11	284	329	324	13	22	265	326	189	67	171	162	334	0.2
VD	211	223	228	202	222	230	266	249	260	291	265	268	254	264	265	269	263	276	268	249	215	198	203	215	249	
VV	0.7	0.9	1.1	1.3	0.8	0.2	0.2	0.3	0.7	1.1	1.7	1.7	2.2	2.4	1.7	1.9	1.4	1.1	1.0	0.9	1.0	1.0	1.0	0.9		1.0

TOTAL NUMBER OF OBSERVATIONS = 642

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	188	221	155	115	138	****	****
2	165	184	187	159	146	115	102	82	66	50	40	339	251	303	313	310	315	220	165	193	147	145	152	189	166	0.8
3	187	187	166	162	164	148	154	197	212	214	214	217	213	220	212	238	221	220	215	249	324	193	190	211	210	5.4
4	201	200	168	141	117	136	94	199	227	235	225	267	261	263	230	197	175	188	163	169	135	205	279	327	217	2.6
5	330	293	270	273	275	280	284	309	327	337	333	343	336	351	329	319	331	338	333	353	351	275	8	319	324	3.8
6	243	225	207	308	227	81	149	49	316	333	317	321	305	297	285	305	293	294	302	259	232	202	51	203	290	2.1
7	171	88	169	217	177	202	192	229	270	273	285	281	247	267	251	221	256	267	94	114	121	71	129	158	230	1.6
8	169	289	270	195	231	270	121	120	169	214	216	210	215	195	181	173	176	170	179	180	185	183	188	218	194	6.2
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	215	225	242	189	168	166	155	****	****
10	150	168	162	176	178	114	158	172	188	192	189	209	209	210	211	240	252	234	231	261	307	34	180	64	199	5.1
11	327	267	307	303	351	338	6	349	79	163	238	232	208	239	190	249	194	337	312	321	294	47	285	268	261	1.6
12	***	***	***	***	***	***	***	***	***	***	287	307	263	255	272	280	277	317	304	311	307	295	333	341	304	4.4
13	322	318	319	324	323	327	343	***	***	331	342	40	41	45	39	34	30	9	7	346	320	273	286	286	348	4.5
14	304	306	305	303	291	286	279	298	321	344	17	15	35	81	70	9	259	69	68	120	145	138	165	302	332	0.8
15	103	132	267	101	***	***	***	270	350	0	311	41	142	209	333	355	358	11	336	297	248	265	215	197	334	0.5
16	197	328	115	148	121	245	261	338	346	327	318	332	313	325	348	13	14	351	33	44	***	278	255	241	334	1.7
17	211	63	161	246	42	111	120	60	9	21	211	206	243	270	210	243	129	119	126	140	167	211	153	185	185	1.4
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	71	200	34	307	102	****	****
19	205	226	261	295	76	118	325	297	269	231	202	197	198	289	286	227	247	287	299	309	319	343	356	356	263	2.4
20	5	324	243	293	121	291	272	320	338	355	298	335	319	326	313	311	306	346	336	4	115	151	155	194	323	1.3
21	270	287	11	***	284	251	289	0	349	321	344	355	337	311	343	349	332	352	1	9	104	134	106	337	340	1.3
22	***	201	240	251	355	48	98	9	342	347	355	257	325	312	73	351	332	359	25	294	256	217	222	168	321	1.0
23	223	0	256	185	260	142	325	315	1	4	332	340	333	322	328	315	336	15	24	348	338	6	270	261	335	1.9
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	292	286	349	33	13	43	58	143	238	****	****
25	***	***	***	***	***	***	***	***	51	306	305	284	298	287	301	321	309	294	303	296	237	264	286	307	298	5.1
26	287	225	199	311	118	127	83	56	338	310	286	305	312	302	319	211	220	226	213	196	198	194	197	191	224	2.2
27	196	193	206	201	203	178	196	190	193	198	205	207	212	200	176	177	181	182	178	175	180	180	176	174	190	6.4
28	130	101	141	162	187	330	317	312	325	336	338	329	270	237	228	229	284	317	312	329	323	270	276	307	284	2.1
29	289	250	246	253	198	270	74	81	31	1	215	211	220	220	220	237	206	180	174	191	286	322	43	92	217	2.7
30	329	335	296	270	278	266	284	298	358	328	333	328	274	302	326	8	28	33	339	305	279	236	219	161	311	2.5
31	157	148	176	87	22	101	204	55	346	352	358	281	8	288	330	324	16	22	265	330	156	48	159	155	16	0.2
VD	215	228	239	213	225	266	238	240	256	285	264	267	255	264	263	270	262	272	264	249	219	202	208	216	252	
VV	0.8	1.1	1.3	1.5	1.1	0.3	0.2	0.4	1.0	1.5	2.4	2.2	3.0	3.3	2.3	2.6	1.9	1.6	1.4	1.2	1.0	1.3	1.1	1.0		1.4

TOTAL NUMBER OF OBSERVATIONS = 648

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	187	229	210	122	144	****	****
2	166	180	197	169	167	130	104	84	73	60	45	0	253	308	319	319	324	256	156	181	148	151	164	197	175	1.1
3	194	191	173	170	173	165	166	199	212	215	215	217	213	221	214	238	222	222	216	249	313	198	195	214	212	6.4
4	208	207	181	172	153	166	111	205	227	238	227	268	263	264	230	202	178	188	176	179	189	233	286	339	221	3.4
5	346	317	294	294	294	305	299	318	334	342	340	348	342	356	334	325	338	342	338	355	9	314	15	338	333	4.6
6	282	270	262	315	278	230	199	65	323	338	323	327	311	304	290	311	298	299	308	279	255	218	43	281	297	2.6
7	0	55	152	227	209	214	207	224	249	281	287	285	252	273	257	224	256	263	110	120	0	71	121	163	236	2.0
8	190	290	274	204	233	267	121	124	173	215	216	211	215	197	183	175	177	173	181	183	187	187	191	217	197	7.2
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	213	223	242	200	170	169	156	****	****
10	153	166	170	176	180	125	163	174	189	194	191	209	209	209	211	239	250	233	231	254	231	14	197	73	198	6.0
11	333	297	329	333	354	351	4	4	84	172	236	230	208	238	196	247	198	343	320	333	309	59	305	285	271	1.7
12	***	***	***	***	***	***	***	***	***	***	298	315	283	274	289	295	289	323	313	318	313	311	341	347	314	5.3
13	330	328	328	331	330	333	349	***	***	337	348	44	47	51	46	40	35	16	13	351	332	299	300	302	354	5.4
14	316	318	320	315	305	309	295	302	338	349	22	20	44	89	76	11	257	78	73	112	134	126	137	280	349	1.2
15	110	111	251	317	272	349	292	253	356	7	319	43	148	209	336	0	4	16	341	321	309	306	140	235	339	0.7
16	221	279	59	145	112	250	263	335	354	334	324	338	321	331	352	19	18	355	39	57	73	315	277	268	342	1.9
17	255	55	160	221	216	106	123	79	12	18	212	207	243	268	217	244	134	124	131	139	161	186	191	186	188	1.9
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	89	201	40	329	58	****	****
19	233	247	***	308	84	111	341	304	274	233	204	198	199	287	291	234	254	292	304	314	325	350	2	360	269	2.7
20	10	338	279	312	63	331	299	331	344	357	307	337	327	333	319	315	307	350	340	5	100	140	150	171	335	1.6
21	315	7	40	103	270	268	266	12	356	328	346	353	341	319	349	351	339	357	8	17	83	122	114	55	355	1.5
22	19	172	***	266	289	304	59	52	358	355	4	259	330	316	79	356	337	4	24	306	289	232	236	217	332	1.2
23	214	3	315	279	274	141	312	329	7	8	337	344	337	327	333	322	343	19	27	357	354	12	318	288	342	2.3
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	298	289	355	36	17	45	56	125	348	****	****
25	***	***	***	***	***	***	***	***	50	311	310	291	302	293	307	326	314	300	310	304	270	282	303	317	305	5.9
26	302	243	240	323	111	132	185	74	346	315	292	311	314	307	322	211	222	226	213	202	204	201	205	195	227	2.8
27	198	199	211	205	207	188	197	191	196	199	207	209	213	201	177	178	184	183	178	176	181	184	178	178	192	7.7
28	155	115	148	169	191	336	321	317	331	339	341	332	278	242	229	230	285	323	318	332	331	300	313	344	291	2.4
29	353	269	269	281	232	290	66	100	48	13	217	212	220	221	221	235	208	183	176	187	296	328	43	67	221	2.9
30	356	347	308	281	294	284	292	309	2	331	339	334	281	306	330	13	33	37	338	313	282	242	235	35	319	2.9
31	158	143	152	82	100	104	169	74	347	352	354	287	11	298	332	330	22	27	263	342	145	304	159	149	58	0.3
VD	228	236	248	225	235	285	244	232	262	290	267	270	258	267	266	273	266	273	264	250	239	215	209	221	257	
VV	0.7	1.1	1.5	1.6	1.4	0.5	0.4	0.5	1.0	1.6	2.5	2.3	3.2	3.5	2.5	2.8	2.0	1.7	1.4	1.2	1.0	1.3	1.1	1.0		1.5

TOTAL NUMBER OF OBSERVATIONS = 652

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	16	15	5	4	( )	16
2	12	17	18	4	10	6	7	9	33	25	24	36	29	15	15	13	18	10	15	10	15	12	9	9	15	36
3	12	10	13	6	9	13	15	13	12	11	14	13	13	13	13	11	12	9	9	10	14	9	9	9	11	15
4	6	5	8	7	5	10	9	35	12	19	15	13	14	13	9	9	7	11	16	12	8	12	13	11	12	35
5	11	9	5	7	5	6	7	13	14	12	13	13	17	14	17	12	14	13	9	6	19	7	(CM)	25	12	25
6	6	6	20	24	10	11	(CM)	32	23	26	32	17	22	16	19	20	16	12	10	10	5	12	10	9	16	32
7	12	18	5	6	16	9	19	(CM)	36	30	19	15	15	16	15	12	15	12	9	5	6	17	7	5	14	36
8	17	16	11	9	10	16	13	11	15	12	13	12	14	13	11	9	10	10	9	8	8	6	9	10	11	17
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	10	10	14	9	5	( )	14
10	5	10	19	7	14	8	9	9	11	13	14	15	14	14	13	13	10	10	11	8	18	29	20	16	13	29
11	17	8	15	14	18	10	21	23	25	34	15	14	16	14	38	18	21	12	9	7	6	(CM)	6	5	16	38
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	8	7	5	6	7	8	8	7	6	6	6	8	8	7	8
13	7	6	7	7	8	8	9	(PF)	(PF)	9	10	9	11	11	12	11	10	10	8	6	6	10	8	5	9	12
14	5	7	6	5	4	7	7	10	27	21	18	17	35	34	21	25	21	13	7	5	6	14	12	14	14	35
15	6	17	6	11	13	24	(CM)	(CM)	29	29	40	18	16	12	20	17	20	15	8	5	4	9	9	14	16	40
16	8	20	13	11	14	13	(CM)	16	34	22	20	19	18	19	10	11	14	10	11	9	8	6	4	7	14	34
17	8	(CM)	6	13	12	7	11	13	24	25	23	12	12	17	21	30	11	8	10	5	4	40	30	33	16	40
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	9	25	13	26	( )	26
19	26	16	16	15	17	6	16	13	9	13	10	15	14	17	14	16	13	11	8	6	7	9	10	9	13	26
20	16	11	4	11	14	10	10	19	20	20	21	34	31	23	29	32	19	16	9	7	9	8	20	22	17	34
21	12	9	(CM)	13	8	4	(CM)	27	34	38	25	27	31	35	25	23	21	11	8	11	16	14	(CM)	18	20	38
22	17	30	10	19	17	12	10	14	25	26	24	45	17	16	11	19	11	11	9	10	9	5	9	19	16	45
23	8	(CM)	4	20	10	7	22	28	17	11	16	23	24	18	22	23	13	10	11	11	17	29	13	12	16	29
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	18	13	8	8	7	10	11	7	( )	18
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	35	23	17	16	15	13	13	12	11	12	8	7	5	8	8	8	13	35
26	8	5	12	13	6	13	12	18	34	23	20	32	39	17	30	16	18	11	9	5	6	6	6	11	15	39
27	41	15	6	7	18	19	8	8	12	13	16	15	15	15	9	13	13	10	8	6	7	6	8	18	13	41
28	26	17	9	4	10	11	9	12	17	23	19	26	19	18	17	14	14	11	10	6	7	8	6	29	14	29
29	15	6	3	5	18	13	14	34	33	22	18	15	15	13	13	15	11	10	6	5	15	23	17	14	15	34
30	12	10	8	9	7	7	9	23	29	27	30	11	11	12	10	9	11	13	13	10	8	11	5	8	13	30
31	4	5	12	9	15	8	12	21	20	31	35	33	27	45	23	23	30	20	20	21	8	21	27	8	20	45
AV	13	12	10	10	12	10	12	18	23	21	20	19	19	17	17	16	15	12	10	8	9	13	11	13	14	
PK	41	30	20	24	18	24	22	35	36	38	40	45	39	45	38	32	30	20	20	21	19	40	30	33		45

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	13	14	5	4	( )	14
2	4	15	9	4	16	7	4	8	32	24	22	31	27	13	15	11	16	10	16	8	11	8	9	6	14	32
3	11	10	13	6	10	13	16	12	10	10	12	12	12	12	12	11	11	9	8	8	19	9	9	7	11	19
4	5	4	10	10	8	15	11	26	10	19	14	12	13	12	8	7	5	9	16	11	9	9	9	10	11	26
5	13	10	5	5	5	6	6	12	13	10	12	12	15	13	16	11	14	12	8	4	17	12	20	11	11	20
6	12	10	23	13	10	13	21	30	19	23	32	16	19	14	18	19	14	11	9	10	7	11	9	14	16	32
7	27	11	6	4	17	9	15	33	33	30	17	14	14	15	13	11	14	10	13	5	5	14	6	3	14	33
8	24	19	11	8	9	14	11	9	14	11	12	11	13	13	9	8	10	9	8	8	8	5	8	9	11	24
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	12	9	10	13	8	3	( )	13
10	3	10	18	6	15	7	7	9	9	12	13	14	13	14	13	12	8	10	11	8	20	28	18	20	12	28
11	12	9	14	17	19	11	21	24	30	32	13	13	14	14	36	18	20	13	9	7	5	11	7	6	16	36
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	7	7	5	5	6	7	8	6	3	1	5	7	7	6	8
13	6	6	6	7	7	7	8	(PF)	(PF)	8	9	9	11	10	11	10	9	9	7	6	7	8	8	4	8	11
14	4	6	6	5	4	6	6	9	22	20	15	16	28	32	15	26	17	12	6	3	4	13	18	19	13	32
15	6	24	7	15	(CM)	(CM)	(CM)	36	27	28	30	13	15	11	19	15	19	14	7	9	11	23	7	24	17	36
16	10	13	7	13	18	13	35	19	39	18	18	16	16	16	8	11	13	8	10	8	(CM)	12	5	6	14	39
17	10	17	6	9	13	4	7	12	24	23	27	11	12	15	17	26	10	7	9	4	2	37	39	15	15	39
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	8	16	11	17	( )	17
19	27	10	17	19	22	4	16	13	8	12	9	15	13	16	12	13	11	10	7	4	6	7	9	8	12	27
20	14	13	5	10	14	20	12	18	17	19	16	27	28	21	26	29	19	15	8	5	7	4	12	32	16	32
21	14	16	16	(CM)	6	3	28	30	33	31	22	25	29	35	24	22	18	11	7	13	13	7	15	20	19	35
22	(CM)	17	21	25	6	14	17	21	28	21	22	45	15	14	9	17	9	12	9	12	14	5	8	27	17	45
23	10	26	14	20	13	7	22	30	15	9	15	22	20	17	19	20	11	8	12	9	15	22	26	17	17	30
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	16	12	9	7	6	9	13	16	( )	16
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	27	22	16	14	12	11	12	10	10	11	7	7	7	7	7	6	12	27
26	11	4	9	18	4	7	23	23	34	19	18	27	34	18	25	17	16	9	8	5	4	3	5	12	15	34
27	37	19	4	6	21	21	8	8	11	13	15	14	15	15	9	13	12	9	7	5	6	6	7	15	12	37
28	25	17	8	4	9	10	8	10	16	21	16	24	17	16	16	13	14	9	8	5	5	10	8	24	13	25
29	13	6	5	7	15	40	20	31	31	25	17	14	15	13	12	13	11	9	5	4	16	16	9	12	15	40
30	10	10	8	8	7	6	7	23	29	25	23	9	10	11	9	7	9	12	14	13	8	9	4	7	12	29
31	3	5	10	9	26	5	12	20	18	34	32	28	27	38	21	22	22	19	18	22	9	19	34	6	19	38
AV	13	12	10	10	12	11	14	19	22	20	18	17	17	16	15	15	13	11	9	8	9	12	12	12	14	
PK	37	26	23	25	26	40	35	36	39	34	32	45	34	38	36	29	22	19	18	22	20	37	39	32		45

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	9	21	6	5	( )	21
2	3	5	4	6	22	12	5	7	32	21	23	30	25	13	15	9	10	9	15	5	8	6	7	5	12	32
3	10	10	11	6	11	12	16	12	9	9	11	10	10	11	11	10	10	7	7	8	12	8	8	6	10	16
4	4	3	8	11	15	22	20	25	8	16	12	12	11	10	7	6	3	5	15	10	13	13	7	11	11	25
5	13	12	7	4	4	6	4	12	12	10	11	12	14	14	13	10	13	11	7	4	7	8	14	8	10	14
6	18	13	17	15	8	13	13	38	18	19	33	15	18	12	17	17	13	10	8	9	6	7	24	20	16	38
7	22	12	18	4	9	4	5	33	45	28	14	13	13	13	12	10	13	8	12	3	0	15	3	3	13	45
8	16	20	10	8	7	12	10	8	12	10	10	9	11	12	8	7	9	9	8	7	7	5	7	9	10	20
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	9	8	10	11	7	2	( )	11
10	2	10	13	4	14	10	6	9	9	10	12	14	11	12	12	11	8	7	10	7	25	25	15	12	11	25
11	8	6	8	11	7	10	24	26	31	28	11	12	12	12	34	14	20	13	9	7	5	10	6	3	14	34
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	6	6	5	4	5	7	7	6	4	5	5	6	6	6	7
13	6	5	6	6	6	6	8	(PF)	(PF)	7	8	9	11	8	10	9	9	9	8	6	6	8	5	5	7	11
14	3	5	5	5	4	5	5	7	21	17	13	15	21	27	15	24	17	11	6	3	5	7	24	15	12	27
15	9	12	8	10	11	6	16	30	25	27	30	11	14	10	20	14	18	13	8	8	7	14	8	14	14	30
16	8	13	12	11	9	15	10	25	38	16	15	15	14	14	8	10	13	8	9	5	9	10	3	5	12	38
17	13	20	4	15	17	6	4	10	26	26	27	10	10	14	16	21	9	6	7	4	2	25	20	5	13	27
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	7	19	7	10	( )	19
19	24	12	(CM)	8	28	4	13	13	8	11	8	13	11	15	12	12	11	9	7	4	5	8	11	9	11	28
20	14	12	6	8	21	16	13	17	16	19	17	24	24	19	21	24	17	13	7	5	7	4	9	14	14	24
21	11	6	8	8	20	5	24	29	29	32	18	23	27	33	22	22	17	10	6	9	13	8	7	17	17	33
22	18	24	(CM)	11	8	12	10	24	32	21	23	40	13	16	9	16	8	12	8	9	11	5	8	15	15	40
23	13	23	11	10	12	7	16	24	15	9	14	18	17	16	18	18	10	8	11	6	9	21	28	25	15	28
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	19	11	9	8	6	7	17	16	( )	19
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	31	19	14	12	11	10	11	9	10	11	6	5	5	6	6	5	11	31
26	16	4	8	10	5	4	11	26	41	21	17	23	25	14	24	14	15	8	6	3	1	2	3	4	13	41
27	21	12	2	3	20	26	6	7	10	13	14	13	13	14	8	12	11	8	6	4	4	5	6	13	10	26
28	29	17	8	4	7	8	7	9	14	18	14	20	17	15	15	13	13	9	7	4	4	8	10	20	12	29
29	19	13	4	5	10	20	11	38	30	36	14	13	13	12	11	11	10	9	4	2	15	14	7	8	14	38
30	8	10	7	7	5	5	8	23	26	22	22	8	9	9	8	8	9	10	13	11	8	7	6	5	11	26
31	2	3	10	6	16	8	17	26	19	39	32	30	22	31	21	22	23	16	18	20	7	16	28	5	18	39
AV	12	11	8	8	12	10	11	20	22	19	16	16	15	14	14	13	12	10	9	6	8	11	10	10	12	
PK	29	24	18	15	28	26	24	38	45	39	33	40	27	33	34	24	23	16	18	20	25	25	28	25		45

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	10	9	8	8	( )	12
2	8	7	7	8	7	7	8	11	15	17	19	20	22	20	19	13	13	14	13	12	11	10	9	9	12	22
3	11	11	9	9	8	8	8	11	12	13	15	17	18	18	18	16	17	13	13	12	9	9	8	8	12	18
4	8	7	8	7	7	8	8	12	13	14	17	10	8	8	8	9	10	11	10	8	7	7	5	4	9	17
5	3	2	0	-1	-2	-2	-2	1	3	4	6	6	7	7	9	8	8	8	6	4	2	1	-1	-2	3	9
6	-2	-2	-3	-4	-4	-4	-2	2	6	7	9	10	11	11	12	12	12	11	10	7	6	4	3	3	5	12
7	3	2	2	2	0	1	2	6	12	14	14	14	14	14	12	11	13	8	8	7	6	6	6	7	8	14
8	6	6	6	6	7	7	8	10	13	16	16	17	18	18	17	16	14	13	13	13	12	11	12	11	12	18
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	10	5	3	2	2	2	( )	11
10	2	2	2	2	2	1	3	7	8	8	12	13	13	12	13	12	10	10	8	6	6	4	4	3	7	13
11	2	1	0	1	1	1	2	3	5	8	9	8	6	8	10	11	9	8	6	3	3	1	1	1	4	11
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	1	1	1	0	0	0	1	1	2	( )	2
13	2	2	2	2	1	2	2	(PF)	(PF)	4	7	4	6	7	6	6	5	5	4	3	3	2	2	2	4	7
14	2	2	2	2	2	2	2	3	4	6	8	8	9	11	11	10	12	11	9	7	5	4	3	2	6	12
15	2	2	1	0	0	0	3	6	9	12	14	14	11	10	13	12	13	12	12	9	7	6	4	4	7	14
16	3	3	3	3	3	2	3	7	11	13	14	16	17	17	12	11	12	12	11	9	7	6	5	4	9	17
17	4	3	3	3	3	2	5	8	12	14	14	16	15	15	17	17	17	13	14	12	11	8	7	8	10	17
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	11	10	9	8	( )	12
19	7	7	7	6	4	5	8	11	8	10	9	14	11	11	9	11	11	12	10	8	8	7	7	6	9	14
20	5	4	3	2	1	1	3	7	9	10	11	13	14	16	16	16	14	13	13	11	8	7	6	4	9	16
21	4	3	3	2	2	2	4	8	12	16	17	18	19	21	21	21	21	19	17	14	12	11	9	8	12	21
22	7	6	6	6	5	6	9	12	17	21	22	24	23	18	20	22	21	20	19	16	14	13	12	11	15	24
23	9	9	9	8	8	8	9	13	15	16	17	18	19	21	21	21	21	18	18	16	14	12	11	11	14	21
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	12	14	12	11	9	7	6	6	( )	14
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	16	17	18	18	18	19	18	19	19	17	16	13	13	12	9	( )	19
26	7	6	6	4	4	6	9	13	18	20	22	23	24	24	24	23	23	23	22	18	16	16	14	14	16	24
27	12	13	14	14	14	12	16	17	19	21	22	23	23	24	22	22	22	21	19	17	15	13	13	13	18	24
28	12	12	11	11	10	8	8	9	11	12	13	15	16	17	17	18	17	16	14	11	8	7	7	6	12	18
29	5	3	2	2	2	2	3	7	12	14	18	18	19	19	20	21	18	17	16	13	13	13	12	11	12	21
30	11	9	8	5	4	3	6	7	10	13	13	11	7	6	6	6	6	6	6	3	3	2	2	1	6	13
31	1	1	1	1	0	0	2	6	9	12	14	17	17	19	19	20	18	18	18	14	11	9	9	9	10	20
AV	5	5	4	4	3	3	5	8	11	13	14	14	14	14	14	14	14	13	12	10	8	7	7	6	10	
PK	12	13	14	14	14	12	16	17	19	21	22	24	24	24	24	23	23	23	22	18	16	16	14	14		24
MN	-2	-2	-3	-4	-4	-4	-2	1	3	4	1	1	1	1	2	1	1	1	0	0	0	1	-1	-2		

MONTHLY MINIMUM = -4

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	11	10	9	9	( )	13
2	10	9	8	9	8	8	8	11	14	16	18	18	19	19	18	13	13	13	13	13	12	11	11	11	13	19
3	11	11	10	9	9	8	9	11	11	12	13	15	16	16	17	16	16	13	13	12	9	9	9	9	12	17
4	8	8	8	8	8	8	9	11	12	13	15	10	8	8	9	9	10	11	10	9	8	7	6	4	9	15
5	4	2	1	0	-1	-2	-2	-1	2	3	4	4	5	6	7	7	7	7	6	4	3	1	1	-1	3	7
6	-1	-1	-2	-3	-3	-4	-2	2	4	6	8	8	9	10	10	11	11	10	9	8	7	6	4	3	5	11
7	3	3	3	3	2	3	3	6	10	12	13	13	13	13	12	10	13	8	7	7	7	7	7	7	8	13
8	7	7	6	7	7	7	8	9	12	14	14	15	16	16	16	14	14	13	13	13	13	12	12	11	12	16
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	9	5	3	3	3	3	( )	11
10	3	3	2	3	2	2	3	6	8	8	10	11	11	11	12	11	9	9	8	7	6	4	4	3	6	12
11	3	2	1	1	1	1	2	3	4	7	7	7	4	7	8	9	8	7	6	3	3	2	1	1	4	9
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	1	1	1	1	0	0	1	2	2	( )	2
13	2	2	2	2	1	1	2	(PF)	(PF)	4	6	3	4	3	3	6	5	5	4	3	3	-2	1	2	3	6
14	2	2	2	2	2	2	2	3	3	5	7	8	9	9	9	9	11	9	8	7	7	3	3	2	5	11
15	2	2	-6	-9	-8	-2	2	6	9	11	13	13	11	8	8	7	8	11	10	8	7	6	5	5	5	13
16	4	4	3	4	2	2	3	7	9	12	13	14	15	16	11	11	11	11	11	9	8	6	6	5	8	16
17	5	4	2	2	2	3	4	0	1	6	8	7	6	8	3	14	15	13	13	12	13	10	8	9	7	15
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	12	11	10	8	( )	12
19	8	8	8	7	6	6	8	9	5	6	8	12	8	9	8	10	10	11	9	8	7	7	7	6	8	12
20	3	5	2	0	1	1	3	4	6	8	9	9	7	8	14	14	13	12	12	11	8	8	8	6	7	14
21	5	3	-7	0	2	3	4	8	11	14	16	17	18	19	19	19	19	18	17	15	13	12	11	8	11	19
22	7	6	7	7	6	7	9	12	16	19	21	22	22	18	19	21	20	19	18	17	15	14	14	13	15	22
23	12	10	10	9	9	9	9	12	14	14	16	17	18	19	19	19	19	18	17	16	14	13	12	11	14	19
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	12	13	12	11	9	8	7	6	( )	13
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	15	16	17	17	18	17	18	18	17	16	14	14	13	9	( )	18
26	5	7	7	1	5	7	9	13	17	19	20	22	22	23	23	22	22	22	21	19	18	18	17	16	16	23
27	14	14	16	16	14	13	16	17	18	19	20	21	21	22	20	21	21	20	19	17	16	14	14	14	17	22
28	13	12	12	12	11	8	8	7	9	11	12	13	14	15	16	16	16	14	13	11	8	7	7	3	11	16
29	5	-1	-1	3	2	2	3	6	9	13	15	14	16	16	16	16	14	13	12	9	13	13	12	11	10	16
30	9	9	7	6	3	3	1	6	9	11	12	10	7	6	4	4	5	6	6	3	3	3	2	1	6	12
31	2	2	2	1	1	1	2	5	8	11	13	15	16	18	17	18	17	18	17	14	12	11	9	11	10	18
AV	6	5	4	4	4	4	5	7	9	11	12	12	12	13	12	13	13	12	11	10	9	8	7	7	9	
PK	14	14	16	16	14	13	16	17	18	19	21	22	22	23	23	22	22	22	21	19	18	18	17	16		23
MN	-1	-1	-7	-9	-8	-4	-2	-1	1	3	1	1	1	1	2	1	1	1	1	0	0	-2	1	-1		

MONTHLY MINIMUM = -9

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	11	10	9	10	( )	13
2	11	10	9	9	8	8	9	11	14	16	18	19	19	19	18	13	13	13	13	13	12	11	11	11	13	19
3	11	11	9	9	9	8	8	10	11	12	14	16	17	17	17	16	16	13	12	11	8	9	8	9	12	17
4	8	8	8	8	8	8	9	11	12	13	15	11	8	8	8	9	10	11	10	10	8	7	6	4	9	15
5	3	2	1	0	-1	-2	-2	0	2	3	4	5	6	6	7	7	7	7	6	4	2	1	0	0	3	7
6	-1	-1	-2	-3	-3	-3	-2	2	6	7	8	8	9	10	10	10	10	10	9	8	7	7	4	3	5	10
7	3	3	2	3	3	3	4	7	11	12	12	13	12	13	11	10	12	9	8	7	-18	7	7	8	7	13
8	8	8	6	7	7	7	8	9	12	14	14	16	17	17	16	14	14	13	13	13	13	12	12	11	12	17
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	9	5	3	2	3	3	( )	11
10	3	3	2	2	2	2	3	6	8	8	11	12	12	11	12	11	9	9	7	6	6	4	4	3	6	12
11	3	2	1	1	1	1	2	3	4	6	7	7	5	6	8	8	8	7	5	3	2	2	2	1	4	8
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	1	1	1	1	1	0	0	1	2	2	( )	2
13	2	2	2	1	1	1	2	(PF)	(PF)	4	6	4	7	8	7	6	5	5	4	3	3	2	2	2	4	8
14	2	2	2	2	2	2	2	3	3	6	8	9	9	9	9	9	10	9	8	7	7	6	5	4	6	10
15	3	3	2	1	1	1	3	6	9	12	13	13	11	9	12	12	13	12	11	8	7	7	6	6	7	13
16	5	4	4	4	4	3	4	7	10	12	13	14	16	16	11	12	12	12	11	8	8	7	6	6	9	16
17	5	4	4	3	3	3	6	8	12	15	13	14	13	13	15	15	16	13	14	13	13	11	9	11	10	16
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	12	11	10	8	( )	13
19	8	8	8	7	6	6	8	10	8	9	8	13	10	9	8	10	10	11	9	8	7	7	6	6	8	13
20	4	4	3	2	2	1	3	6	8	11	11	13	13	14	14	14	13	12	12	10	8	8	8	7	8	14
21	6	4	4	4	3	3	4	8	12	15	17	18	19	19	20	20	19	18	17	14	13	12	11	9	12	20
22	8	7	7	7	6	7	9	13	17	21	22	22	22	18	20	21	20	19	18	17	14	14	14	13	15	22
23	12	11	10	9	9	9	10	12	16	16	17	18	18	19	19	19	19	18	18	15	14	13	12	11	14	19
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	12	14	12	11	9	8	7	6	( )	14
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	15	16	17	17	17	17	18	18	17	16	15	14	13	9	( )	18
26	8	7	7	6	6	8	10	13	17	19	20	22	23	23	23	22	22	22	21	19	18	18	17	17	16	23
27	15	15	17	16	15	13	16	17	18	19	21	21	22	23	21	21	21	20	19	17	15	14	14	13	18	23
28	12	12	12	12	11	8	7	8	11	12	13	14	14	15	16	16	16	14	13	11	9	8	7	7	11	16
29	6	4	3	3	3	3	3	6	11	15	16	16	17	18	18	18	18	17	16	14	14	13	12	12	11	18
30	11	9	8	5	4	4	5	6	10	12	13	11	7	6	5	6	6	6	6	3	2	2	2	1	6	13
31	1	2	2	1	1	1	3	5	9	12	14	16	17	18	18	18	18	18	17	14	12	11	10	12	10	18
AV	6	6	5	5	4	4	5	8	11	12	13	13	13	13	13	13	13	13	12	10	8	8	8	7	9	
PK	15	15	17	16	15	13	16	17	18	21	22	22	23	23	23	22	22	22	21	19	18	18	17	17		23
MN	-1	-1	-2	-3	-3	-3	-2	0	2	3	1	1	1	1	1	1	1	1	1	0	-18	1	0	0		

MONTHLY MINIMUM = -18

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	83	78	78	61	83	( )	83
2	178	211	172	122	89	61	139	78	-39	-11	-44	0	-156	-72	-67	-22	22	-22	-17	56	100	50	44	106	41	211
3	-6	-50	-44	-33	-28	-17	-22	-56	-67	-78	-89	-122	-122	-139	-139	-106	-94	-72	-56	-50	-61	-28	-50	-22	-65	-6
4	6	56	17	33	33	28	33	-33	-83	-111	-144	-44	22	-6	11	-39	-33	-6	-6	89	56	33	56	-6	-2	89
5	-22	-6	-17	17	-6	-6	-39	-44	-78	-100	-122	-111	-94	-83	-128	-133	-122	-106	-67	-17	-50	44	39	72	-49	72
6	-6	-28	50	67	67	50	-28	0	-44	-56	-78	-111	-122	-122	-144	-117	-133	-106	-83	-22	94	200	89	33	-23	200
7	-78	78	-6	-33	206	178	183	67	-72	-106	-111	-106	-144	-111	-122	-100	-122	-39	-6	28	83	83	83	83	-3	206
8	106	111	-11	11	-17	22	-6	-61	-61	-106	-106	-94	-122	-111	-89	-94	-83	-67	-39	-22	-11	-6	-28	-22	-38	111
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-72	-72	-44	-11	-33	44	61	( )	61
10	67	61	17	0	-44	-6	-6	-67	-72	-78	-89	-117	-122	-111	-128	-117	-111	-83	-67	-44	-17	-22	-17	-17	-50	67
11	-6	-6	11	-17	-50	-56	-61	-67	-78	-117	-133	-111	-83	-178	-183	-150	-117	-78	-89	-44	-56	-17	0	-6	-70	11
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-56	28	-156	0	-111	-44	-28	-17	-22	-72	-44	-28	39	-22	-38	39
13	-33	-33	-39	-44	-44	-50	-44	(PF)	(PF)	-61	-61	-100	100	144	89	6	-67	-72	-83	-72	-133	-122	-39	-39	-36	144
14	-44	-56	-56	-67	-61	-56	-39	-67	-117	-17	61	28	-22	-72	-156	-44	-122	-56	-72	-67	-33	78	144	94	-34	144
15	67	94	56	44	0	-6	6	22	28	33	-83	-28	-106	-78	-117	-11	-33	0	-61	-72	-56	6	56	67	-7	94
16	106	78	50	11	111	94	72	6	-11	-50	-61	-56	-67	-94	-128	-6	-17	-100	-56	-117	-11	6	39	44	-6	111
17	89	6	22	28	-6	72	28	17	33	56	-94	-89	-144	-111	-106	-117	-50	-28	0	61	122	172	161	256	16	256
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	78	11	-11	0	( )	78
19	44	67	117	117	94	83	22	-44	-111	-106	-106	-94	-83	-111	-83	-94	-106	-94	-83	-61	-56	-50	-67	-78	-37	117
20	-89	-78	-50	11	17	-6	-6	-44	-33	39	-67	22	-106	-78	-83	-89	-106	-72	-61	-50	28	67	144	156	-22	156
21	89	72	111	161	111	122	0	-6	-6	-22	-6	39	-33	-67	-44	-72	-89	-78	-61	-50	44	61	106	100	20	161
22	56	67	61	33	56	67	50	33	11	33	-6	-172	-94	-44	-22	-39	-100	-67	-56	17	11	128	183	183	16	183
23	233	89	39	72	89	39	67	33	11	-11	-67	-22	-39	-78	-89	-94	-106	-11	-22	-67	17	11	28	44	7	233
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-106	-22	-61	-17	-78	-78	-33	44	-22	( )	44
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-28	-56	-111	-117	-128	-122	-139	-117	-117	-106	-61	-44	72	111	33	-39	-60	111
26	6	83	89	83	94	111	83	33	-6	-28	-83	-111	-83	-117	-94	-89	-78	-106	-50	39	211	222	194	206	25	222
27	217	211	172	106	50	61	0	-50	-67	-100	-133	-128	-128	-111	-94	-83	-78	-72	-50	-11	-6	11	0	-17	-13	217
28	0	-28	39	44	78	-22	-89	-89	-67	-39	-61	-72	-106	-139	-139	-150	-122	-100	-78	-22	28	33	17	-6	-45	78
29	17	-11	39	50	39	56	28	-11	-33	44	-144	-100	-144	-150	-156	-161	-100	-67	-33	78	33	-33	-67	17	-34	78
30	11	-39	-56	-61	-50	-17	-61	-67	-6	-61	-56	-67	-33	-78	-83	-39	-39	-50	-72	-78	-78	-61	-33	-61	-51	11
31	-6	44	44	6	-22	22	33	0	6	11	-11	-122	44	-117	-67	-72	-39	-22	-72	-61	28	133	89	133	-1	133
AV	40	40	33	30	32	33	14	-17	-40	-42	-76	-73	-84	-87	-97	-82	-79	-63	-52	-23	12	36	45	45	-21	
PK	233	211	172	161	206	178	183	78	33	56	61	39	100	144	89	6	22	0	0	89	211	222	194	256		256
MN	-89	-78	-56	-67	-61	-56	-89	-89	-117	-117	-144	-172	-156	-178	-183	-161	-133	-106	-89	-117	-133	-122	-67	-78		

MONTHLY MINIMUM = -183

TEMPERATURE 010M
DEGREE C

CB TRACT
MRI A020
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
4	(IM)	(IM)	7	8	7	7	9	12	13	14	15	8	9	11	11	11	11	11	11	9	7	5	4	3	9	15
5	2	0	-2	-3	-4	-4	-3	1	3	4	5	6	6	7	7	8	8	8	7	4	0	-3	-4	-6	2	8
6	-6	-6	-7	-7	-8	-7	-5	0	5	6	7	8	9	10	10	11	11	11	11	6	3	1	0	-1	3	11
7	-1	-2	-2	-3	-3	-2	0	4	10	12	13	13	13	14	12	12	14	9	9	7	6	6	5	5	6	14
8	4	5	7	7	8	9	9	10	14	15	16	17	18	18	17	17	16	15	15	14	14	11	12	12	13	18
9	12	12	11	9	11	11	13	13	14	14	14	15	16	16	15	14	13	13	10	6	5	5	3	3	11	16
10	3	3	2	2	4	3	5	8	10	10	11	13	13	12	13	11	10	11	9	8	7	5	5	4	8	13
11	2	0	-1	0	0	0	2	3	4	7	8	8	7	7	9	10	9	8	7	5	3	1	0	0	4	10
12	0	0	1	0	-1	0	1	2	2	2	2	2	1	0	0	0	(IM)	(IM)	1	0	1	1	3	4	1	4
13	3	3	3	3	3	3	3	(IM)	(IM)	5	7	5	7	8	8	8	7	7	6	5	3	2	1	1	5	8
14	1	1	2	2	2	1	2	4	5	(IM)	9	10	10	10	10	12	12	11	10	8	6	4	2	0	6	12
15	0	-1	-1	-2	-2	-2	1	5	9	12	13	13	12	11	11	12	13	13	12	8	5	4	3	2	6	13
16	2	1	1	1	1	0	2	6	11	12	13	14	15	15	12	12	13	12	12	9	7	6	4	3	8	15
17	2	2	2	1	0	1	3	7	12	14	14	15	14	15	17	17	16	15	15	11	9	7	6	6	9	17
18	6	5	5	4	5	7	8	13	14	16	18	19	20	20	21	21	21	20	14	12	11	10	9	7	13	21
19	6	5	5	5	4	4	7	10	8	11	11	14	12	10	10	12	12	12	11	10	9	9	8	8	9	14
20	7	6	3	1	0	0	3	7	8	10	10	12	13	13	13	14	14	14	14	10	7	5	4	(IM)	8	14
21	1	1	0	-1	-2	-1	3	8	11	15	16	17	18	19	20	20	20	20	18	14	10	8	6	5	10	20
22	4	3	3	2	1	2	6	11	15	18	22	22	21	21	22	22	22	21	18	14	12	9	8	7	13	22
23	6	5	5	5	5	6	7	12	15	16	17	17	18	19	20	20	20	20	19	15	12	10	8	6	13	20
24	5	4	3	4	4	3	6	10	11	13	15	16	17	17	16	12	14	15	14	11	10	7	4	2	10	17
25	1	0	1	1	1	2	4	7	13	14	15	16	17	18	18	18	19	19	18	16	13	10	8	6	11	19
26	5	4	3	2	2	3	7	12	17	19	20	21	22	23	24	23	23	23	22	18	14	11	10	8	14	24
27	8	8	9	10	10	11	15	18	19	20	21	21	22	22	21	22	22	21	20	18	17	14	15	12	17	22
28	13	12	9	9	7	8	9	9	10	11	13	14	15	15	17	17	16	16	14	11	6	5	5	5	11	17
29	4	2	0	0	0	1	3	7	10	14	16	18	18	19	20	20	19	18	17	14	15	13	11	11	11	20
30	10	11	9	6	5	4	6	8	11	11	12	12	9	7	7	7	7	8	7	5	4	4	2	1	7	12
31	0	0	-1	-2	-2	-1	1	3	7	11	13	15	16	17	18	19	19	19	17	14	10	7	6	7	9	19
AV	4	3	3	2	2	2	4	8	10	12	13	14	14	14	14	14	15	15	13	10	8	6	5	4	9	
PK	13	12	11	10	11	11	15	18	19	20	22	22	22	23	24	23	23	23	22	18	17	14	15	12		24
MN	-6	-6	-7	-7	-8	-7	-5	0	2	2	2	2	1	0	0	0	7	7	1	0	0	-3	-4	-6		

MONTHLY MINIMUM = -8

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	48	49	55	55	55	58	57	51	41	37	31	27	92	70	39	42	69	48	41	50	58	63	72	74	53	92
2	74	75	80	79	79	81	82	78	59	46	41	35	29	22	24	24	78	74	77	77	75	73	73	74	63	82
3	78	72	72	74	79	82	86	89	87	75	67	40	32	31	29	29	35	56	52	52	74	82	80	79	64	89
4	85	86	86	87	89	89	89	70	56	53	41	70	75	82	81	78	74	65	70	74	78	87	90	61	76	90
5	49	58	64	66	59	59	60	61	51	41	34	28	26	22	16	12	8	8	8	10	19	23	24	26	35	66
6	32	34	38	38	38	38	41	31	22	19	17	15	12	12	11	11	11	11	11	16	21	22	26	30	23	41
7	33	37	44	53	54	58	60	46	47	32	21	19	19	19	31	43	29	82	75	73	70	70	62	57	47	82
8	62	68	84	73	75	65	68	55	37	23	21	19	16	14	14	15	20	20	20	19	19	22	22	32	37	84
9	33	29	29	29	24	22	23	23	22	21	20	18	14	12	15	18	18	19	28	97	99	100	99	100	38	100
10	100	94	94	88	89	93	94	66	45	31	29	27	16	12	13	14	15	28	27	30	44	52	60	71	51	100
11	75	80	88	96	99	99	99	98	98	85	66	22	35	67	60	54	35	40	43	61	80	91	97	97	74	99
12	98	98	98	98	98	98	98	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
13	99	99	98	97	97	97	97	91	89	89	79	68	76	68	66	60	56	59	62	61	70	80	90	91	81	99
14	92	91	91	91	92	92	92	92	87	80	72	60	46	41	41	39	40	35	37	44	50	59	72	80	67	92
15	82	83	83	89	89	89	89	89	62	52	35	28	24	27	69	41	41	35	32	35	43	68	76	82	60	89
16	83	87	86	89	89	92	93	93	72	57	46	39	34	24	20	18	45	40	37	45	46	66	79	84	61	93
17	88	91	93	93	94	95	95	96	96	75	49	34	30	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	96
18	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	( )
19	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	( )
20	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	( )
21	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	( )
22	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	( )
23	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	( )	( )
24	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	(0E)	52	56	48	38	29	30	30	45	60	46	47	53	52	52	59	71	( )	71
25	72	78	80	83	85	86	84	72	42	33	30	28	25	24	20	19	18	18	18	20	27	32	33	47	45	86
26	67	81	85	87	88	87	76	58	39	28	20	16	13	10	10	12	14	13	12	12	13	13	13	14	37	88
27	16	21	20	20	20	26	27	25	25	24	23	22	20	18	19	19	18	18	19	23	30	35	36	36	23	36
28	40	43	48	54	56	66	66	67	57	44	43	40	40	38	29	26	21	17	17	18	22	30	34	37	40	67
29	42	51	58	59	59	60	63	50	39	34	30	29	27	25	24	23	22	28	30	35	39	38	38	43	39	63
30	45	48	65	81	93	95	84	78	62	55	48	56	95	100	99	98	96	94	93	100	100	100	100	100	83	100
31	100	100	100	100	100	100	100	97	77	56	39	1	15	16	12	12	12	13	12	21	31	35	35	31	51	100
AV	66	69	72	74	75	76	76	70	59	50	42	35	38	37	36	35	39	40	40	47	52	58	61	63	54	
PK	100	100	100	100	100	100	100	99	99	99	99	99	99	100	99	99	99	99	99	100	100	100	100	100		100
MN	16	21	20	20	20	22	23	23	22	19	17	1	12	10	10	11	8	8	8	10	13	13	13	14		

MONTHLY MINIMUM = 1

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0
2	0	0	0	0	0	3	10	15	42	35	70	65	72	45	20	10	15	9	3	0	0	0	0	0	414	72
3	0	0	0	0	0	0	6	15	24	27	57	63	81	63	60	27	24	6	3	0	0	0	0	0	456	81
4	0	0	0	0	0	0	12	18	18	27	54	6	6	6	6	12	6	6	6	0	0	0	0	0	183	54
5	0	0	0	0	0	3	9	33	39	54	69	60	60	57	69	54	39	21	6	0	0	0	0	0	573	69
6	0	0	0	0	0	3	15	33	48	60	72	81	78	78	63	51	33	21	6	0	0	0	0	0	642	81
7	0	0	0	0	0	3	9	30	48	51	48	33	45	33	21	30	21	6	6	0	0	0	0	0	384	51
8	0	0	0	0	0	0	9	18	42	57	45	57	63	48	30	33	18	9	7	0	0	0	0	0	436	63
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	0	0	0	0	0	0	7	7
10	0	0	0	0	0	3	15	27	48	30	72	72	60	33	57	27	27	9	3	0	0	0	0	0	483	72
11	0	0	0	0	0	0	7	18	30	33	45	36	42	45	45	39	18	12	3	0	0	0	0	0	373	45
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	( )
13	0	0	0	0	0	0	(PF)	(PF)	(PF)	15	33	18	66	63	48	24	12	6	3	0	0	0	0	0	288	66
14	0	0	0	0	0	3	6	9	15	27	63	36	45	45	30	33	21	15	3	0	0	0	0	0	351	63
15	0	0	0	0	0	3	18	30	51	63	75	75	15	69	48	51	39	21	6	0	0	0	0	0	564	75
16	0	0	0	0	0	3	15	30	45	56	72	81	81	63	36	33	27	21	6	0	0	0	0	0	569	81
17	0	0	0	0	0	3	12	33	48	63	51	81	42	33	54	27	36	9	6	0	0	0	0	0	498	81
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0
19	0	0	0	0	0	3	18	42	21	30	33	60	36	15	21	18	21	18	6	0	0	0	0	0	342	60
20	0	0	0	0	0	3	18	30	51	66	42	81	75	75	60	54	27	15	9	0	0	0	0	0	606	81
21	0	0	0	0	0	3	18	36	51	66	75	81	81	75	66	51	36	21	6	0	0	0	0	0	666	81
22	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
23	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	31	24	9	1	0	0	0	0	73	31
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	51	64	67	83	78	69	67	46	41	23	2	1	0	0	0	0	592	83
26	0	0	0	0	0	2	16	36	50	64	74	80	82	77	55	16	35	25	9	1	0	0	0	0	622	82
27	0	0	0	0	0	4	19	26	48	64	76	79	82	74	51	50	40	26	9	1	0	0	0	0	649	82
28	0	0	0	0	0	3	16	28	52	48	55	46	47	50	49	46	40	25	10	1	0	0	0	0	514	55
29	0	0	0	0	0	4	10	28	51	65	68	57	74	67	53	58	28	19	4	0	0	0	0	0	586	74
30	0	0	0	0	0	2	12	22	45	60	43	24	6	22	14	19	6	8	2	0	0	0	0	0	285	60
31	0	0	0	0	0	4	14	40	52	62	76	80	82	79	64	59	28	22	10	1	0	0	0	0	673	82
TL	0	0	0	0	0	55	285	598	970	1188	1434	1435	1399	1283	1087	876	668	404	143	4	0	0	0	0	11827	
PK	0	0	0	0	0	4	19	42	52	66	76	83	82	79	69	59	41	26	10	1	0	0	0	0		83

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
4	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
5	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
6	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
7	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
8	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
9	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
10	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
11	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
12	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
13	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
14	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
15	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
16	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
17	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(OR)	(OR)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	778	778	779	779	779	( )	779
19	779	779	779	779	779	778	778	779	780	780	780	779	780	780	781	781	781	781	781	782	782	783	784	784	780	784
20	784	784	784	784	784	785	785	785	785	781	782	782	782	782	782	782	782	782	782	782	782	782	782	782	783	785
21	782	782	782	782	782	782	782	782	783	782	783	782	782	782	781	781	781	781	781	781	781	781	781	781	782	783
22	780	780	780	780	780	780	780	780	780	780	780	780	779	779	778	778	778	778	778	778	778	779	779	779	779	780
23	778	779	779	779	779	780	780	781	781	781	781	781	781	780	780	779	779	780	780	780	780	781	780	781	780	781
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	780	780	780	780	780	780	781	780	780	( )	781
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	779	778	777	777	776	776	776	775	775	774	774	774	774	775	775	775	776	779
26	776	776	775	775	775	775	776	776	776	776	776	776	775	775	775	774	774	774	774	774	774	775	774	775	775	776
27	774	774	775	775	775	775	775	776	776	776	775	775	774	774	774	773	773	772	772	773	773	773	773	773	774	776
28	772	773	773	773	773	775	775	776	776	776	776	775	775	775	775	775	775	776	776	777	777	778	778	778	775	778
29	777	777	777	777	776	777	777	777	776	776	776	775	775	775	774	774	774	774	774	774	775	775	775	775	776	777
30	775	775	775	775	775	776	776	776	776	776	776	776	777	778	778	779	779	779	779	780	781	781	781	781	778	781
31	781	782	782	782	782	782	782	782	782	782	782	782	781	781	780	779	779	778	778	778	778	778	777	776	780	782
AV	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	
PK	784	784	784	784	784	785	785	785	785	782	783	782	782	782	782	782	782	782	782	782	782	783	784	784		785
MN	772	773	773	773	773	775	775	776	776	776	775	775	774	774	774	773	773	772	772	773	773	773	773	773		

MONTHLY MINIMUM = 772

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1													63		3	3	3								71	63
2															5		13								18	13
3													5	3	3	3									13	5
4																									( )	
5																									( )	
6																									( )	
7																	8								8	8
8																									( )	
9																						10			10	10
10																									( )	
11																									( )	
12									3	5	5	20	13	25	23	36	8	46	5	25	5	13	28	18	277	46
13	10	8		8	5																				30	10
14																									( )	
15							(TR)	3							8										10	8
16										3															3	3
17													(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	
18	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
19	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
20	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
21	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
22	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
24	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)											(TR)	(TR)	(TR)			( )	
25																									( )	
26																									( )	
27																									( )	
28																									( )	
29																						3			3	3
30							(TR)						10						8	3					20	10
31							3																		3	3
TL	10	8	( )	8	5	( )	3	3	3	8	5	20	91	28	41	41	30	46	13	28	5	25	28	18	( )	
PK	10	8		8	5		3	3	3	5	5	20	63	25	23	36	13	46	8	25	5	13	28	18		63

PRECIPITATION
CM*100

CB TRACT
MRI AD20
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1														46	3	3									51
2																						(TR)	(TR)	(TR)	
3					3	3	3	(TR)	3	3											(TR)	(TR)			13
4					(TR)	(TR)					51	5	3	5	3			3							69
5					(TR)	(TR)																			
6									(TR)	(TR)															
7																									
8																									
9																			5	3	3	(TR)	(TR)	(TR)	10
10	(TR)																								
11																									
12									3	3	18	18	30	18	53	46	25	18	28	33	33	13	13	5	356
13		3	5	8	5	3	(TR)	(TR)	(TR)			5	3												30
14							(TR)	(TR)	(TR)	(TR)	(TR)														
15							(TR)																		
16																									
17																									
18																									
19															10										10
20																							(TR)	(TR)	
21																						(TR)			
22																					(TR)				
23																							(TR)		
24																									
25																							(TR)	(TR)	
26																								(TR)	
27																							(TR)	(TR)	
28																							(TR)	(TR)	
29																									
30														3	10						8	3	(TR)	(TR)	23
31																									
TL		3	5	8	8	5	3		5	5	69	28	36	71	79	48	25	20	33	36	43	15	13	5	561

PRECIPITATION
CM*100

CB TRACT
MRI A028
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1														51				3							53
2																		18							18
3						(TR)	(TR)	3	(TR)	3															5
4												10	13	3	5										30
5																									
6																									
7																			13						13
8			5																						5
9																					3	3			5
10						3														3					5
11		(TR)	(TR)																	3	(TR)	(TR)	(TR)		3
12										5		23	13	3	3	20	25	25	25	18			20	25	206
13	25	10	13	25	23	13	13	5	3	8														3	140
14																							(TR)	(TR)	
15	(TR)																					3	(TR)	(TR)	3
16	(TR)																				(TR)				
17								3																	3
18																									
19									(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
20	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)														
21																									
22				5																				3	8
23	(TR)	(TR)	(TR)	(TR)	(TR)															(TR)	(TR)	3	(TR)	3	5
24								(TR)							5										5
25																			(TR)	(TR)	(TR)	(TR)	3	(TR)	3
26																							(TR)	(TR)	
27																								(TR)	
28	(TR)																							(TR)	
29	(TR)																								
30			(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )
31	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)														
TL	25	10	18	30	23	15	13	10	3	15		33	25	56	13	20	25	46	38	23	3	8	23	33	( )

```
STABILITY CLASS USING DT/DZ                                          CB-TRACT
DT 60-10M                                                            TRAILER AA23
WS 10M                                                                MAY  1982
                                                                     OCCIDENTAL OIL SHALE, INC.

                                            HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  AVE

  1 (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   F    F    F    E    F  (  )
  2    F    F    F    F    F    E    F    F    D    E    D    E    A    D    D    E    E    E    E    E    F    E    E    F    E
  3    E    D    D    D    D    E    E    D    D    C    C    D    D    D    D    D    B    D    D    D    D    D    D    E    D
  4    E    E    E    E    E    E    E    D    C    B    B    D    E    E    D    D    D    E    E    F    E    E    E    E    E
  5    E    E    E    E    E    E    D    D    C    C    C    B    B    C    B    C    B    B    D    E    D    E  (  )   E    D
  6    E    D    E    E    E    E  (  )   E    D    D    C    B    B    B    B    B    B    B    C    E    F    F    F    E    D
  7    C    F    E    D    F    F    F  (  )   D    A    B    B    B    B    D    B    B    D    E    E    F    F    F    E    D
  8    F    F    E    E    D    E    E    D    D    D    C    D    D    D    D    D    D    D    D    D    E    E    D    E    D
  9 (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   D    D    D    E    D    E    E  (  )
 10    E    E    E    D    D    E    E    D    D    C    D    D    D    D    D    C    C    C    D    D    E    E    E    E    D
 11    E    E    E    E    D    D    D    D    C    A    B    B    C    B    A    B    B    C    B    D    D  (  )   E    E    C
 12 (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   D    E    B    E    B    D    D    E    E    D    D    D    D    E  (  )
 13    D    D    D    D    D    D    D  (  ) (  )   D    D    C    E    E    D    E    D    D    C    D    A    A    D    D    D
 14    D    D    D    D    D    D    D    D    A    E    E    E    E    D    B    D    A    D    D    D    D    F    F    F    D
 15    E    F    E    E    E    E  (  ) (  )   E    E    C    D    A    C    B    E    D    E    D    D    D    E    E    E    D
 16    F    F    E    E    F    F  (  )   E    E    D    D    D    D    B    D    E    E    B    D    A    E    E    E    E    D
 17    F  (  )   E    E    E    E    E    E    E    E    B    C    B    B    B    B    D    D    E    E    E    F    F    F    D
 18 (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   E    F    E    E    E  (  )
 19    E    E    F    F    F    F    E    D    D    B    D    B    C    B    C    B    B    B    C    D    D    D    D    C    D
 20    B    C    D    E    E    E    E    D    D    E    D    E    A    C    C    B    A    D    D    D    E    E    F    F    D
 21    F    E  (  )   F    F    F  (  )   E    E    E    E    E    D    D    D    D    B    C    D    D    E    E  (  )   F    E
 22    E    E    E    E    E    E    E    E    E    E    E    A    B    D    E    D    B    D    D    E    E    F    F    F    E
 23    F  (  )   E    E    F    E    E    E    E    E    D    E    D    C    B    B    B    E    E    D    E    E    E    E    D
 24 (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   B    E    D    E    C    C    D    E    E  (  )
 25 (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   D    D    B    B    C    C    D    D    C    C    D    D    E    F    E    D  (  )
 26    E    F    F    F    F    F    F    E    E    D    C    B    C    B    B    B    C    B    D    E    E    E    E    F    D
 27    F    F    D    E    E    E    E    D    D    B    B    C    C    C    D    C    C    D    D    E    D    E    E    E    D
 28    E    D    E    E    E    E    B    B    D    D    D    D    B    B    B    B    B    B    C    E    E    E    E    E    D
 29    E    E    E    E    E    E    E    E    D    E    B    C    C    D    C    C    C    D    D    E    E    D    D    E    D
 30    E    D    D    D    D    E    D    D    E    D    D    D    D    C    C    D    D    D    D    C    C    D    D    D    D
 31    E    E    E    E    E    E    E    E    E    E    E    A    E    A    D    D    D    E    D    D    E    F    F    F    E

AVE    E    E    E    E    E    E    E    D    D    D    C    C    C    C    C    C    C    D    D    D    E    E    E    E    D


 TOTAL OCCURRENCES:  A= 15     B= 71     C= 57     D=199     E=232     F= 68     HOURS MISSING=102
```

II-236

(08/19/82-KPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION UG/M**3		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		6	2	2	2	2	3	2	2	3	2	3	7	6	17	40	23	2	
GT	65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. -	65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. -	60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. -	55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. -	50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. -	45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
35. -	40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
30. -	35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. -	30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. -	25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0 :	3
15. -	20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0 :	5
10. -	15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	2	0 :	9
5. -	10. :	1	0	0	0	0	0	0	0	0	0	0	2	1	4	15	6	0 :	29
LT	5. :	41	21	18	18	10	18	24	33	65	69	74	35	39	36	42	51	12 :	606
TOTAL	:	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.		1	0	0	0	0	0	0	0	0	0	0	0	1	3	6	3	0	1

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION UG/M**3		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		15	9	7	9	9	13	11	5	13	9	15	26	16	45	105	58	11	
GT	65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0 :	3
60. -	65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0 :	2
55. -	60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0 :	2
50. -	55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0 :	2
45. -	50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0 :	2
40. -	45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. -	40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0 :	3
30. -	35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	0 :	9
25. -	30. :	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	1	0 :	6
20. -	25. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	9	7	0 :	17
15. -	20. :	1	0	0	0	0	0	0	0	0	0	1	1	3	8	12	4	0 :	30
10. -	15. :	2	0	0	0	0	1	1	0	2	0	0	0	2	6	7	9	1 :	31
5. -	10. :	14	4	6	5	3	5	4	6	6	7	7	5	13	11	20	33	6 :	155
LT	5. :	25	17	12	13	7	12	19	27	57	62	66	29	22	14	2	3	5 :	392
TOTAL	:	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.		4	3	4	4	4	4	3	3	3	3	3	4	5	10	22	12	5	7

0 = NO OBSERVATIONS

(09/16/82-)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

WIND DIRECTION

CONCENTRATION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	7	7	7	9	5	7	11	5	9	7	9	15	11	18	48	22	9	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0 :	2
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0 :	6
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	1	0	3	11	3	0 :	18
10. - 15. :	0	0	0	0	0	0	1	0	0	0	0	2	1	2	14	8	0 :	28
5. - 10. :	8	3	4	3	3	5	0	6	7	5	4	4	12	15	20	26	6 :	131
LT 5. :	34	18	14	15	7	13	23	27	58	64	70	30	27	22	16	22	6 :	466
TOTAL :	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.	2	2	3	3	3	3	2	2	2	2	2	3	3	5	12	7	4	4

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (03) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	103	103	105	96	78	84	92	82	96	117	135	129	103	137	101	117	88	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0 :	2
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0 :	2
110. - 120. :	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	1	0 :	5
100. - 110. :	1	2	1	0	0	0	0	0	0	0	6	0	1	1	3	3	0 :	18
90. - 100. :	9	3	0	1	0	0	2	0	6	10	2	1	2	10	18	19	0 :	83
80. - 90. :	14	10	5	2	0	2	2	1	15	19	17	7	5	4	16	11	2 :	132
70. - 80. :	14	4	7	6	1	0	2	9	18	16	19	8	18	8	13	10	2 :	155
60. - 70. :	4	1	2	7	3	5	11	18	18	15	14	8	8	6	12	9	3 :	144
50. - 60. :	0	0	2	1	3	4	6	5	8	6	11	7	1	7	4	6	2 :	73
40. - 50. :	0	1	1	1	3	7	1	0	0	0	4	5	5	3	1	1	3 :	36
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0 :	4
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.	81	82	73	70	56	57	65	66	73	78	74	68	71	77	76	80	62	74

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	344	114	574	229	114	114	114	114	229	114	229	114	114	114	114	114	114	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0 :	3
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	10	3	1	3	3	4	4	6	17	20	13	10	13	10	16	14	3 :	150
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	31	18	13	14	7	14	20	27	47	48	59	27	27	32	55	44	9 :	492
TOTAL :	42	21	15	18	10	18	24	33	65	68	73	37	40	42	71	58	12	647
MEAN CONC.	35	16	45	31	34	25	19	20	33	33	23	31	37	27	25	27	28	29

0 = NO OBSERVATIONS

(09/16/82-RPI)

```
                 NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

     SULFUR DIOXIDE (SO2)                                                              CATHEDRAL BLUFFS SHALE OIL

                           TRAILER    AB23      PERIOD( 5/01/82 TO  5/31/82)
                                                    WIND DIRECTION
                N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
     MAX        5    0    0    0    0    0    2    2    2    2    2    0    0   10   15    7    0
  UG/M**3
          ••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
  GT    13. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    1    0    0 :     1
 12. -  13. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 11. -  12. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 10. -  11. :   0    0    0    0    0    0    0    0    0    0    0    0    0    1    0    0    0 :     1
  9. -  10. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  8. -   9. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  7. -   8. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    2    1    0 :     3
  6. -   7. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  5. -   6. :   1    0    0    0    0    0    0    0    0    0    0    0    0    2    5    0    0 :     8
  4. -   5. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  3. -   4. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  2. -   3. :   2    0    0    0    0    0    1    1    1    4    6    0    0    6   12   11    0 :    44
  1. -   2. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  LT     1. :  39   21   17   18   10   18   23   32   64   65   68   36   40   33   51   47   12 :   594
   TOTAL    :  42   21   17   18   10   18   24   33   65   69   74   36   40   42   71   59   12     651
          ••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
   MEAN         0    0    0    0    0    0    0    0    0    0    0    0    0    0    1    0    0      0
   CONC.

          0 = NO OBSERVATIONS
```

II-2+2

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

		WIND DIRECTION																
CONCENTRATION UG/M**3		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		1	2	1	2	1	1	2	1	1	2	2	2	4	4	4	4	0	
GT 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
12. - 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
9. - 10.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
6. - 7.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
4. - 5.	:	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0 :	5
3. - 4.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3.	:	0	1	0	1	0	0	1	0	0	3	2	6	4	1	4	1	0 :	24
1. - 2.	:	1	0	2	2	1	4	5	2	3	11	5	4	4	8	10	7	0 :	69
LT 1.	:	41	20	15	15	9	14	18	31	62	55	67	26	31	31	56	50	12 :	553
TOTAL	:	42	21	17	18	10	18	24	33	65	69	74	36	40	42	71	59	12	651
MEAN CONC.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

```
                        FREQUENCY TABLE OF WIND SPEED BY DIRECTION

     10 METER LEVEL                                                     CATHEDRAL BLUFFS SHALE OIL

                            STATION AA23   PERIOD( 5/01/82 TO  5/31/82)
                                               WIND DIRECTION
             N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  VAR  TOTAL
WIND SPEED
   MAX       6    4    5    2    1    2    3    4    8    7    7    6    6    6    6    6    0
METERS/SEC
         ............................................................................................
 GT    11. :  0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :    0
 8. -  11. :  0    0    0    0    0    0    0    0    4    0    0    0    0    0    0    0    0 :    4
 5. -   8. :  1    0    2    0    0    0    0    0   15   22   13    4    1    4    5    4    0 :   71
 3. -   5. :  9    3    5    0    0    0    1    7   18   20   16    7   13   18   26   20    0 :  163
 1. -   3. : 21    9    5    8    6   13   15   16   13   13   25   18   21   16   31   29    0 :  259
 LT     1. : 11    9    6   10    4    5    8   10   15   14   20    8    5    4    9    7    0 :  145
  TOTAL    : 42   21   18   18   10   18   24   33   65   69   74   37   40   42   71   60    0     642
         ............................................................................................
  PERCENT     7.   3.   3.   3.   2.   3.   4.   5.  10.  11.  12.   6.   6.   7.  11.   9.   0.  100.

           0 = NO OBSERVATIONS



(08/19/82-RPI)
```

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(5/01/82 TO 5/31/82)

WIND DIRECTION

WIND SPEED METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	5	4	7	3	2	3	4	6	12	10	9	8	8	8	8	8	0	
GT 11.	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
8. - 11.	0	0	0	0	0	0	0	0	11	11	10	3	1	1	2	2	0	41
5. - 8.	1	0	5	0	0	0	0	6	17	22	19	9	5	13	13	16	0	126
3. - 5.	15	6	2	2	0	9	5	11	6	13	5	5	19	20	30	20	0	168
1. - 3.	15	9	8	7	9	9	13	13	9	4	8	11	18	16	23	21	0	193
LT 1.	15	3	8	4	6	5	2	8	5	15	5	8	9	7	8	8	0	116
TOTAL	46	18	23	13	15	23	20	38	52	65	47	36	52	57	76	67	0	648
PERCENT	7.	3.	4.	2.	2.	4.	3.	6.	8.	10.	7.	6.	8.	9.	12.	10.	0.	100.

0 = NO OBSERVATIONS

(08/19/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(5/01/82 TO 5/31/82)

WIND SPEED METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	8	5	8	3	3	4	4	8	12	11	11	9	8	8	9	9	0	
GT 11. :	0	0	0	0	0	0	0	0	6	2	1	0	0	0	0	0	0 :	9
8. - 11. :	1	0	1	0	0	0	0	2	15	19	14	5	2	2	6	8	0 :	75
5. - 8. :	3	2	5	0	0	0	0	5	15	19	19	6	7	13	18	19	0 :	131
3. - 5. :	15	6	6	1	2	7	8	8	13	10	5	7	8	20	30	28	0 :	174
1. - 3. :	26	12	10	11	7	12	9	9	6	7	9	6	12	13	23	22	0 :	194
LT 1. :	8	4	3	7	3	1	2	2	4	1	6	5	9	4	6	4	0 :	69
TOTAL :	53	24	25	19	12	20	19	26	59	58	54	29	38	52	83	81	0	652
PERCENT	8.	4.	4.	3.	2.	3.	3.	4.	9.	9.	8.	4.	6.	8.	13.	12.	0.	100.

0 = NO OBSERVATIONS

(08/19/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AD20 PERIOD(5/01/82 TO 5/31/82)

WIND SPEED METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	3	3	3	3	5	5	7	7	6	5	5	6	6	6	4	5	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 8. :	0	0	0	0	1	1	9	7	6	3	4	1	8	11	0	1	0 :	52
3. - 5. :	6	1	1	2	7	28	6	9	10	12	8	11	25	26	18	2	0 :	172
1. - 3. :	11	7	6	13	94	107	9	4	1	6	10	11	40	32	15	13	0 :	379
LT 1. :	3	1	2	3	15	9	5	3	4	0	1	4	5	1	2	2	0 :	60
TOTAL :	20	9	9	18	117	145	29	23	21	21	23	27	78	70	35	18	0	663
PERCENT	3.	1.	1.	3.	18.	22.	4.	3.	3.	3.	3.	4.	12.	11.	5.	3.	0.	100.

0 = NO OBSERVATIONS

```
FIVE MAXIMUM SLIDING AVERAGE                                      C-B TRACT
UG/M**3                                                           SITE AB23
                                                                  MAY  1982
                                                                  CATHEDRAL BLUFFS SHALE

     COMPONENT     AVG. TIME       RANK      DAY     HOUR(BEG)     VALUE
       SO2            3 HR
                                     1        6         13           7.0
                                     2       28         19           7.0
                                     3       25         15           6.1
                                     4       25         18           5.2
                                     5       20         10           3.5
       SO2           24 HR
                                     1       25          1           2.3
                                     2       19         20           1.3
                                     3        3          1           1.1
                                     4        5         15           1.1
                                     5       27         22           1.1
       CO             1 HR
                                     1       24         21         600.0
                                     2       24         20         300.0
                                     3       24         22         200.0
                                     4       24         23         200.0
                                     5       24         24         200.0
       CO             8 HR
                                     1       24         17         200.0
                                     2        2          1         100.0
                                     3        5          1         100.0
                                     4        6         21         100.0
                                     5        7          5         100.0
       O3             1 HR
                                     1       19         15         137.3
                                     2       19         16         135.4
                                     3       19         17         129.5
                                     4       19         14         121.6
                                     5        5         10         117.7
       PART          24 HR
                                     1       31          1          43.5
                                     2       27          1          31.3
                                     3       23          1          26.7
                                     4       19          1          25.6
                                     5        3          1          21.3
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

MAY 1982

GASEOUS PARAMETERS	
NOX:	88 *
NO:	88
NO2:	88
O3:	88
CO:	87
SO2:	88
H2S:	88

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	88 *
30 M:	88
60 M:	88
WIND DIRECTION	
10 M:	88
30 M:	88
60 M:	88
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	88
30 M:	88
60 M:	88
TEMPERATURE	
10 M:	88
30 M:	88
60 M:	88
DELTA TEMPERATURE:	88
RELATIVE HUMIDITY:	78
SOLAR RADIATION:	88
BAROMETRIC PRESSURE:	40
PRECIPITATION:	78
PARTICULATES:	100

JUNE

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-253
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-254
Nitrogen Dioxide (NO_2) at Station AB23 . . . . II-255
Ozone (O_3) at Station AB23 . . . . II-256
Carbon Monoxide (CO) at Station AB23 . . . . II-257
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-258
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-259
Particulates Daily Average at Stations AB23, AB26 . . . . II-260

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-261
Wind Speed at Station AA23 - 30 Meter Level II-262
Wind Speed at Station AA23 - 60 Meter Level II-263
Wind Speed at Station AD20 . . . . II-264
Wind Direction at Station AA23 - 10 Meter Level II-265
Wind Direction at Station AA23 - 30 Meter Level II-266
Wind Direction at Station AA23 - 60 Meter Level II-267
Wind Direction at Station AD20 . . . . II-268
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-269
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-270
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-271
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-272
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-273
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-274
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-275
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-276
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-277
Ambient Air Temperature at Station AD20 . . . . II-278
Delta Temperature (60m - 10m) at Station AA23 . . . . II-279
Relative Humidity at Station AB23 - 3 Meter Level II-280
Solar Radiation at Station AB23 . . . . II-281
Barometric Pressure at Station AB23 . . . . II-282
Precipitation at Station AB23 . . . . II-283
Precipitation at Station AD20 . . . . II-284
Precipitation at Station AD28 . . . . II-285
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-286

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-287
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-288
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-289
Ozone (O_3) at Station AB23. . . . . II-290
Carbon Monoxide (CO) at Station AB23. . . . . II-291
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-292
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-293

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-294
Station AA23 - 30 Meter Level II-295
Station AA23 - 60 Meter Level II-296
Station AD20. . . . . II-297

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-298

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-299

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	2	2	6	1	1	1	1	1	1	1	1	1	2	(CA)	(CA)	5	11	10	7	17	4	1	2	4	17
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	(CA)	(CA)	2	1	1	5	4	1	7	9	12	16	2	1	5	5	16
3	1	1	1	1	2	1	4	2	4	4	1	1	4	2	5	4	4	5	7	2	1	1	1	2	3	7
4	1	1	2	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	2	4
5	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	4	11	10	2	2	11
6	1	1	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	5
7	1	2	5	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	5
8	1	1	1	1	1	1	2	10	10	4	6	4	2	2	5	7	4	10	9	1	5	1	1	2	4	10
9	1	1	1	1	1	1	4	4	4	4	1	5	1	1	4	2	2	1	2	1	1	1	4	2	2	5
10	1	1	1	1	1	1	1	1	1	1	2	1	1	5	4	4	2	1	1	1	5	1	1	2	2	5
11	1	1	1	1	1	1	1	2	2	2	4	4	2	6	5	4	4	11	24	35	1	1	1	2	5	35
12	0	1	1	2	1	1	1	1	2	2	1	1	1	1	0	1	1	1	2	1	1	1	1	2	1	2
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
14	0	1	1	1	5	1	1	1	1	1	1	1	2	1	1	5	5	1	1	7	1	1	1	2	2	7
15	1	1	1	1	1	1	1	2	4	7	1	2	2	5	11	4	1	1	1	1	1	1	1	2	2	11
16	1	1	1	1	1	4	1	1	2	4	2	2	2	2	4	1	1	1	1	1	1	1	1	4	2	4
17	1	1	1	1	1	1	1	1	(CA)	(CA)	10	2	1	2	4	4	1	2	1	1	1	1	1	2	2	10
18	1	1	1	1	1	1	1	2	5	1	1	4	1	1	1	1	1	1	1	1	1	1	1	2	2	5
19	1	1	1	1	1	1	1	4	2	2	2	2	2	2	0	1	1	1	1	1	1	1	1	2	2	4
20	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	2	2	2	7	20	1	1	1	2	2	20
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	4	1	1	1	1	1	2	( )	4
22	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	0	1	4	1	1	1	1	2	1	4
24	0	1	1	1	1	1	1	4	4	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	4
25	(CA)	1	1	1	1	1	1	4	2	5	4	7	9	1	6	4	1	1	4	1	1	0	1	1	3	9
26	1	1	1	0	1	1	1	2	2	5	4	2	2	2	2	1	2	5	1	1	1	1	0	2	2	5
27	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	2	1	2
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	1	1	1	1	1	1	1	2	3	2	2	2	2	2	3	2	2	3	3	4	3	2	2	3	2	
PK	1	2	5	6	5	4	4	10	10	7	10	7	9	6	11	7	5	11	24	35	17	11	10	5		35

(09/24/82-RPI)

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	4	11	6	15	2	2	4	2	2	2	2	2	2	2	(CA)	(CA)	11	34	30	23	51	11	2	2	10	51
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	6	6	(CA)	(CA)	6	2	2	15	9	2	21	24	30	45	8	0	17	12	45
3	2	4	8	6	2	2	9	6	11	9	2	2	9	6	17	9	9	13	21	4	0	6	6	2	7	21
4	0	2	4	17	0	0	0	2	2	0	2	2	2	2	2	2	0	2	2	0	2	2	0	9	2	17
5	4	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	2	8	13	32	28	2	5	32
6	2	8	2	2	2	0	0	0	9	2	2	2	2	2	0	0	2	0	0	0	0	4	11	6	2	11
7	2	8	19	2	0	0	2	2	2	0	2	2	2	2	2	0	2	0	0	0	0	2	0	0	2	19
8	0	0	2	0	2	2	6	28	30	11	17	9	4	6	15	23	11	30	28	0	13	4	2	2	10	30
9	2	2	2	2	2	0	9	8	9	9	4	15	6	6	9	8	6	0	2	4	4	2	15	2	5	15
10	2	4	8	2	2	4	2	2	2	6	6	4	6	15	9	11	6	2	2	4	13	2	0	2	5	15
11	2	2	4	6	2	2	4	9	8	4	8	11	8	19	15	8	9	38	70	103	0	0	4	4	14	103
12	8	4	0	9	2	2	4	2	4	6	4	2	0	0	0	0	2	4	9	2	2	8	4	2	3	9
13	6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	2	0	2	0	8	2	8
14	0	0	2	4	11	2	2	6	4	2	2	2	4	2	2	17	17	2	4	23	2	4	4	6	5	23
15	6	4	2	4	6	4	6	9	9	23	6	8	9	15	34	9	4	2	2	2	2	2	2	2	7	34
16	6	9	4	4	9	11	4	2	8	9	8	8	8	6	9	4	6	2	2	2	2	4	2	9	6	11
17	6	4	2	4	4	2	2	6	(CA)	(CA)	15	9	6	9	13	9	2	6	2	2	2	2	2	2	5	15
18	4	2	4	4	4	4	4	4	9	4	6	9	4	6	6	2	2	2	2	2	2	4	2	6	4	9
19	6	4	4	2	4	2	4	9	8	4	4	6	8	8	2	2	2	4	2	2	2	2	2	2	4	9
20	4	2	2	2	2	2	2	2	2	2	2	6	2	2	2	6	8	8	26	62	2	2	2	2	6	62
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	9	4	4	4	4	2	2	( )	9
22	4	2	2	2	2	4	2	4	2	2	2	4	4	4	4	2	4	4	4	2	2	4	2	2	3	4
23	2	2	2	2	2	2	4	4	4	6	4	6	2	2	2	2	2	2	11	2	2	2	6	8	3	11
24	4	2	4	4	2	4	8	11	11	2	4	4	2	2	2	2	2	4	2	2	2	2	6	4	4	11
25	(CA)	2	2	2	4	2	2	11	9	13	13	24	24	4	17	13	6	4	15	2	4	2	2	2	8	24
26	4	4	2	4	2	9	6	11	9	15	11	6	8	6	8	6	8	15	6	2	2	2	2	4	6	15
27	4	11	6	6	4	8	4	2	2	2	4	2	2	4	2	2	2	2	2	2	2	6	4	2	3	11
28	2	2	2	2	2	2	4	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	4
29	2	2	2	2	6	2	2	4	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	0	2	6
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	3	4	4	4	3	3	4	6	6	5	5	6	5	5	7	6	5	7	9	10	6	4	4	4	5	
PK	8	11	19	17	11	11	9	28	30	23	17	24	24	19	34	23	17	38	70	103	51	32	28	17		103

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	8	2	6	0	0	2	0	0	0	0	0	0	0	(CA)	(CA)	4	17	15	11	24	6	0	0	4	24
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	2	2	(CA)	(CA)	2	0	0	8	4	0	9	11	11	21	4	0	9	5	21
3	0	2	6	4	0	0	4	2	6	4	0	0	4	2	9	4	4	6	9	0	0	4	4	0	3	9
4	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	11
5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	15	13	0	2	15
6	0	6	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	8	2	1	8
7	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
8	0	0	0	0	0	0	2	13	15	6	8	4	0	2	8	11	6	15	15	0	6	2	0	0	5	15
9	0	0	0	0	0	0	4	2	4	4	2	8	4	4	4	4	2	0	0	2	2	0	9	0	2	9
10	0	2	6	0	0	2	0	0	0	4	2	2	4	8	4	6	2	0	0	2	6	0	0	0	2	8
11	0	0	2	4	0	0	2	6	4	0	2	6	4	9	8	2	4	21	32	49	0	0	2	0	6	49
12	8	2	0	6	0	0	2	0	0	2	2	0	0	0	0	0	0	2	6	0	0	6	2	0	1	8
13	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
14	0	0	0	2	4	0	0	4	2	0	0	0	0	0	0	9	9	0	2	11	0	2	2	2	2	11
15	4	2	0	2	4	2	4	6	4	11	4	4	6	8	17	4	2	0	0	0	0	0	0	0	3	17
16	4	8	2	2	8	6	2	0	4	4	4	4	4	2	4	2	4	0	0	0	0	2	0	4	3	8
17	4	2	0	2	2	0	0	4	13	28	0	6	4	6	8	4	0	2	0	0	0	0	0	0	3	28
18	2	0	2	2	2	2	2	0	2	2	4	4	2	4	4	0	0	0	0	0	0	2	0	2	1	4
19	4	2	2	0	2	0	2	4	4	0	0	2	4	4	2	0	0	2	0	0	0	0	0	0	1	4
20	4	0	0	0	0	0	0	0	0	0	0	4	2	0	0	2	4	4	15	32	0	0	0	0	3	32
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	4	2	2	2	2	0	0	( )	4
22	2	2	0	0	0	2	0	2	0	0	0	2	2	2	2	0	2	2	2	0	0	2	0	0	1	2
23	0	0	0	0	2	0	2	2	2	2	2	4	0	0	0	0	2	0	6	0	0	0	4	4	1	6
24	4	0	2	2	0	2	6	6	6	2	2	2	0	0	0	0	0	2	0	0	0	0	4	0	2	6
25	(CA)	0	0	0	2	0	0	6	6	6	8	13	11	2	8	8	4	2	9	0	2	2	0	0	4	13
26	2	2	0	4	0	8	4	8	6	8	6	2	4	2	4	4	4	8	4	0	0	0	2	0	3	8
27	2	8	4	4	2	6	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	4	2	0	1	8
28	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2
29	0	0	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	2	2	1	2	1	1	1	2	3	3	2	2	2	2	3	2	2	3	4	4	2	2	2	1	2	
PK	8	8	11	11	8	8	6	13	15	28	8	13	11	9	17	11	9	21	32	49	24	15	13	9		49

(09/24/82-RPI)

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	76	69	67	61	71	82	80	88	90	96	92	98	100	80	104	110	104	94	94	100	73	76	78	78	86	110
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	71	80	86	90	102	94	90	(CA)	(CA)	88	92	80	76	74	67	76	73	63	81	102
3	69	61	69	71	65	73	55	73	82	78	82	82	86	98	94	92	88	96	92	90	73	69	78	92	79	98
4	86	78	80	74	84	88	88	92	102	108	110	108	108	114	110	110	104	110	118	118	106	108	104	82	100	118
5	86	80	80	82	82	82	80	104	108	120	120	129	129	122	114	114	112	110	127	106	86	76	74	84	100	129
6	76	71	76	82	84	86	90	88	82	92	96	102	102	104	106	106	112	118	112	102	86	84	84	86	93	118
7	86	82	80	88	96	94	98	104	108	100	110	122	122	120	118	114	118	116	120	118	104	104	102	102	105	122
8	96	102	94	88	86	82	78	76	82	92	94	102	112	106	94	92	102	100	104	98	84	86	74	69	91	112
9	63	61	61	61	61	61	59	123	67	76	84	84	96	96	96	92	100	114	104	88	80	82	78	100	83	123
10	96	96	90	96	92	80	74	88	100	94	90	90	90	86	88	86	90	92	90	86	78	86	73	73	88	100
11	69	71	63	65	71	61	59	65	76	74	82	82	86	88	94	90	90	78	59	47	74	76	74	78	74	94
12	67	74	82	69	78	73	57	57	59	65	78	86	84	86	86	90	92	90	76	74	73	71	84	88	77	92
13	80	80	80	76	71	78	69	74	76	78	82	86	90	88	86	92	92	86	80	67	65	73	73	65	79	92
14	78	82	78	80	67	74	55	65	74	90	88	94	92	98	96	90	90	84	78	63	69	55	61	45	77	98
15	47	47	45	39	43	43	47	63	57	59	73	78	78	78	71	80	80	80	74	67	59	61	63	61	62	80
16	55	49	49	57	53	37	45	61	69	78	84	84	82	80	80	86	88	88	86	80	71	71	74	69	70	88
17	61	57	53	49	45	47	51	67	65	69	82	88	86	86	84	86	84	82	76	65	80	78	74	69	70	88
18	57	53	51	49	49	49	51	57	53	57	57	59	69	71	74	80	86	90	98	98	92	76	80	80	68	98
19	78	76	76	65	65	61	71	71	78	80	84	88	90	90	90	90	92	80	80	76	71	69	69	67	77	92
20	61	63	63	63	69	65	57	59	78	90	92	96	98	96	96	94	96	94	84	59	73	76	80	86	79	98
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	76	65	65	80	84	90	88	84	( )	90
22	78	78	74	78	74	69	61	71	86	100	100	76	63	71	71	80	84	73	76	65	63	63	65	69	74	100
23	63	63	69	69	71	65	53	59	82	86	86	88	88	90	90	88	86	82	74	76	73	67	57	51	74	90
24	59	63	57	59	55	49	51	55	65	80	82	84	84	86	86	88	88	90	80	73	63	63	61	59	70	90
25	(CA)	67	65	59	59	55	51	53	65	67	74	73	69	73	82	82	88	90	80	78	71	69	61	63	69	90
26	55	57	69	67	69	63	55	59	78	73	76	80	80	84	82	84	82	78	76	71	63	63	63	63	70	84
27	51	53	53	59	61	57	49	59	67	78	80	80	78	74	73	73	76	76	73	69	69	63	67	69	67	80
28	69	69	67	63	63	61	61	80	76	80	84	88	88	82	80	80	86	88	88	73	67	65	63	61	74	88
29	57	61	61	65	61	59	61	63	65	67	67	71	69	71	73	71	69	69	69	61	57	57	63	63	64	73
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	70	69	69	68	68	66	63	73	78	83	87	89	90	90	90	90	91	89	87	80	75	74	74	73	79	
PK	96	102	94	96	96	94	98	123	108	120	120	129	129	122	118	114	118	118	127	118	106	108	104	102		129

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	(CA)	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	5	100
4	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	100	100	100	100	100	0	0	0	0	43	100
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	10	100
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
10	0	100	0	100	100	100	100	100	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	0	57	100
11	0	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	34	100
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	10	100
13	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	10	100
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	100	100	24	100
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	5	100
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	100	100	38	100
17	0	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	0	100	100	100	100	100	100	0	0	0	0	31	100
18	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	14	100
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	19	100
20	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	100	100	100	100	29	100
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
22	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	29	100
25	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	100	100	100	100	200	200	100	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	72	200
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	29	100
28	0	100	100	100	100	100	100	100	100	0	0	0	0	0	100	0	0	0	0	0	0	100	100	100	57	100
29	100	0	0	0	0	0	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	48	100
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	9	18	13	18	22	22	30	34	12	4	4	4	9	8	33	38	37	33	33	33	33	8	21	21	20	
PK	100	100	100	100	100	100	200	200	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		200

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	(CA)	(CA)	3	5	5	5	8	0	0	0	2	8
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	3	3	0	3	3	0	5	5	5	8	0	0	0	2	8
3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3	3	5	0	0	0	0	0	1	5
4	0	0	0	3	0	0	0	0	0	0	3	3	3	3	3	0	3	0	3	3	0	0	0	0	1	3
5	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0	0	0	0	0	3	0	3	3	0	1	3
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8	0	0	0	0	0	0	0	3	5	0	3	0	0	3	3	5	3	8	5	0	0	0	0	0	2	8
9	0	0	0	0	0	0	0	0	0	3	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	3	0	0	3
10	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	13	21	0	0	0	0	2	21
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	3	3	0	3	0	0	5	3	0	0	0	0	0	0	0	1	5
15	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	3	3	0	0	0	0	0	0	0	1	5
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
17	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	3	0	0	3	3	3	0	0	0	0	0	0	0	0	1	3
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
19	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	3
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10	0	0	0	0	1	10
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	( )	0
22	0	0	0	0	0	0	0	0	5	8	8	5	5	5	5	5	5	5	8	5	5	5	5	5	4	8
23	5	5	5	5	5	5	5	5	5	8	5	8	5	5	5	5	8	5	8	5	5	5	5	5	6	8
24	5	5	5	5	5	5	5	5	8	8	8	8	8	8	8	8	8	5	5	5	5	5	8	5	6	8
25	(CA)	5	5	5	5	5	5	5	8	8	10	10	10	5	8	5	5	5	5	5	5	3	3	5	6	10
26	3	3	3	5	5	5	5	5	5	8	8	5	8	8	8	5	5	8	5	5	5	5	3	5	5	8
27	5	5	5	5	5	5	5	5	5	5	8	8	8	5	8	8	8	8	8	8	5	5	5	5	6	8
28	5	5	5	5	5	3	3	3	3	5	5	5	5	5	8	8	8	8	8	8	8	8	5	5	6	8
29	5	8	5	5	5	5	5	8	5	5	5	5	5	5	5	3	5	5	5	5	5	3	3	5	5	8
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	1	1	1	1	1	1	1	1	2	2	3	2	3	3	3	3	2	3	3	3	2	1	1	1	2	
PK	5	8	5	5	5	5	5	8	8	8	10	10	10	8	8	8	8	8	13	21	8	8	8	5		21

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	4	4	3	4	4	4	6	4	4	4	4	3	4	4	1	1	2	6
11	0	1	1	3	1	3	1	1	3	3	3	4	4	3	3	3	3	1	1	3	3	1	1	1	2	4
12	0	0	0	0	0	0	0	1	1	1	1	0	3	3	3	0	0	0	0	0	0	0	0	0	1	3
13	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	1	1	0	0	1
15	0	0	0	0	0	0	0	1	0	0	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0	1
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	( )	0
22	0	0	0	0	0	0	0	0	3	4	4	3	1	1	0	0	0	0	0	0	0	0	0	0	1	4
23	0	0	0	0	0	0	0	1	3	4	4	4	4	4	4	1	3	3	1	1	1	1	1	1	2	4
24	1	3	1	1	1	0	0	0	1	1	1	1	3	3	1	3	1	0	1	1	1	1	1	1	1	3
25	(CA)	0	0	0	0	0	0	0	0	0	1	3	3	1	1	1	0	0	1	1	0	0	0	0	1	3
26	1	1	1	3	1	1	3	3	3	1	3	3	3	3	1	1	3	1	3	1	1	0	1	0	2	3
27	0	0	0	1	1	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	1	1
28	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	3	1	1	1	1	1	0	0	0	1	3
29	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	
PK	1	3	1	3	1	3	3	3	4	4	4	4	4	4	6	4	4	4	4	3	4	4	1	1		6

(09/24/82-RPI)

PARTICULATE DATA
UG/M3

C-B TRACT
JUNE 1982
OCCIDENTAL OIL SHALE, INC.

DAY	AB20	AB23	STATION AB26	AD42	AD56
8	( )	30.2	22.3	( )	( )
12	( )	26.5	16.8	( )	( )
16	( )	13.1	29.7	( )	( )
20	( )	21.3	30.9	( )	( )
24	( )	24.6	25	( )	( )
28	( )	28.1	18.3	( )	( )
AVE	( )	24	23.8	( )	( )
GM	( )	23.2	23.2	( )	( )
PEAK	( )	30.2	30.9	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	2	(CM)	1	1	2	7	7	6	5	5	6	7	6	5	5	8	7	5	5	3	4	2	2	5	8
2	3	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	2	3	3	3	2	2	3	3	2	2	1	2	2	3
3	4	2	1	0	0	2	1	0	1	2	2	3	1	2	2	4	3	4	4	3	1	2	1	0	2	4
4	2	2	1	1	3	6	6	5	7	7	7	6	7	7	8	8	9	7	6	3	2	4	4	2	5	9
5	2	2	1	1	0	0	3	6	6	8	8	9	9	10	9	10	8	9	8	6	4	5	2	1	5	10
6	2	0	2	1	2	2	2	3	2	2	3	3	5	5	5	6	7	6	4	2	3	2	0	1	3	7
7	(CM)	0	0	3	4	2	4	6	8	7	7	6	6	7	8	6	6	7	6	4	3	4	4	4	5	8
8	3	4	2	3	4	2	1	3	4	3	4	4	4	4	4	6	6	6	5	4	2	3	4	2	4	6
9	(CM)	2	1	2	2	2	1	1	2	2	2	3	2	2	2	2	3	4	3	2	0	2	1	2	2	4
10	2	1	1	0	1	1	1	1	1	1	1	2	2	1	3	4	2	1	1	1	1	3	2	2	2	4
11	1	1	1	1	0	1	1	1	0	2	2	2	3	3	3	4	5	4	4	4	3	1	1	(CM)	2	5
12	1	0	1	0	1	1	1	0	1	1	2	2	3	4	4	4	4	3	1	1	1	2	0	1	2	4
13	1	0	1	0	1	2	5	3	4	4	4	4	5	5	5	5	6	6	3	1	1	2	2	3	3	6
14	1	3	3	1	0	1	1	(CM)	1	1	1	0	3	2	2	2	6	6	4	2	2	1	1	0	2	6
15	0	0	1	1	0	0	1	0	2	2	3	3	2	2	4	3	3	3	3	2	1	1	0	1	2	4
16	1	0	(CM)	1	0	(CM)	(CM)	1	1	1	1	2	2	2	2	3	2	1	2	3	2	2	1	4	2	4
17	1	1	2	1	1	1	0	1	1	2	2	1	2	2	2	3	3	3	3	1	2	1	4	2	2	4
18	1	1	2	4	3	2	2	2	2	2	2	3	2	1	1	2	3	4	4	4	3	1	2	3	2	4
19	0	0	1	0	2	1	0	1	1	1	1	2	2	3	3	4	4	3	7	7	3	2	2	2	2	7
20	1	3	2	3	3	1	0	0	1	0	1	1	1	2	1	1	2	3	3	3	2	2	2	1	2	3
21	0	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	0	3	4	5	6	4	( )	6
22	2	2	2	1	1	2	1	1	1	2	1	2	2	3	4	2	5	3	1	1	2	2	2	1	2	5
23	1	2	2	2	2	2	1	0	1	0	1	1	3	5	8	3	3	4	5	3	1	2	1	1	2	8
24	1	1	1	0	0	1	0	1	1	0	0	1	1	2	5	3	3	2	2	2	2	1	2	0	1	5
25	0	(PF)	1	1	1	0	1	0	0	2	3	3	4	2	3	6	5	4	4	3	2	3	1	1	2	6
26	0	1	0	1	1	0	1	0	0	1	2	2	3	2	2	3	2	2	3	3	3	2	3	2	2	3
27	(CM)	0	0	1	0	0	(CM)	0	1	1	0	1	1	2	2	3	3	3	4	4	4	4	0	1	2	4
28	1	2	3	3	2	1	1	2	5	5	6	6	5	5	6	6	6	5	4	4	3	4	4	4	4	6
29	5	4	4	4	4	2	4	5	6	6	5	4	5	6	6	6	6	5	4	4	3	3	4	3	5	6
30	2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	2
AV	2	1	2	1	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	3	2	2	2	2	3	
PK	5	4	4	4	4	6	7	7	8	8	8	9	9	10	9	10	9	9	8	7	4	5	6	4		10

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	3	0	2	1	3	10	9	8	7	8	8	9	8	7	7	10	10	7	7	4	5	3	3	6	10
2	5	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	2	2	2	2	3	4	4	4	3	3	4	4	4	4	2	2	3	5
3	6	2	1	1	1	1	1	0	1	3	2	4	1	2	3	5	4	5	5	4	2	2	2	0	2	6
4	2	0	(CM)	3	5	8	8	7	9	9	9	8	9	10	11	12	13	10	8	5	5	6	6	3	7	13
5	3	3	2	1	0	0	4	8	8	10	11	12	13	13	13	14	10	13	12	8	6	7	3	3	7	14
6	3	(CM)	2	2	2	4	4	4	2	3	4	4	7	7	6	8	9	8	6	4	4	3	0	1	4	9
7	1	1	1	5	7	4	6	8	10	9	10	8	8	10	10	8	8	9	8	7	6	7	7	7	7	10
8	6	7	5	6	7	4	2	4	5	4	5	5	6	5	6	8	8	8	7	5	3	4	5	3	5	8
9	1	1	2	2	2	2	1	2	2	2	2	4	3	3	3	3	4	6	4	3	0	2	1	4	2	6
10	3	2	1	0	0	1	1	1	1	2	2	2	3	1	4	4	2	2	1	2	1	3	3	2	2	4
11	2	0	0	1	(CM)	1	1	(CM)	1	2	3	3	4	4	4	6	6	5	6	6	4	1	1	1	3	6
12	1	(CM)	1	(CM)	1	1	1	0	1	1	2	2	4	5	6	4	5	4	2	1	1	5	1	0	2	6
13	3	1	2	1	2	4	7	4	4	5	5	6	7	8	7	7	8	8	4	2	1	3	4	5	5	8
14	1	4	4	2	0	2	1	0	2	2	1	0	4	3	3	2	8	8	6	4	4	2	1	1	3	8
15	1	1	0	1	0	1	(CM)	0	2	2	4	4	3	3	5	4	4	4	4	3	1	1	1	1	2	5
16	(CM)	1	0	0	1	0	1	1	1	1	2	2	2	2	2	4	3	1	3	4	3	4	2	5	2	5
17	2	2	2	2	1	(CM)	0	1	1	2	2	2	3	2	2	4	4	4	4	1	3	2	6	3	2	6
18	2	1	3	5	4	3	3	3	3	3	2	4	3	1	1	2	4	6	6	6	4	2	2	4	3	6
19	1	0	1	1	2	0	0	1	2	1	2	3	3	3	4	5	6	4	10	9	4	3	3	4	3	10
20	2	4	4	4	4	1	0	0	2	1	1	1	1	2	1	1	2	4	3	3	3	3	2	1	2	4
21	0	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	1	5	5	7	8	6	( )	8
22	4	3	4	2	1	3	1	1	2	2	2	3	3	4	6	3	8	4	1	2	3	3	4	2	3	8
23	2	2	3	2	2	3	2	1	1	1	1	1	4	6	11	4	4	6	8	4	2	3	3	1	3	11
24	1	1	0	1	1	0	1	0	1	0	1	1	2	3	8	4	4	3	3	3	3	2	1	0	2	8
25	1	(CA)	2	1	0	0	1	0	1	3	3	4	5	3	4	8	7	5	6	4	3	4	1	0	3	8
26	1	2	0	1	1	0	0	0	0	2	3	3	3	3	3	4	3	3	4	4	4	4	4	4	2	4
27	1	1	(CM)	1	1	1	1	1	1	1	1	1	2	2	2	3	4	4	5	5	6	7	2	0	2	7
28	1	2	4	4	3	0	0	4	7	7	8	8	7	7	8	8	8	7	5	5	4	6	6	7	5	8
29	8	7	7	7	8	4	5	7	8	8	7	6	6	8	8	8	8	7	6	5	4	5	6	6	7	8
30	3	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	3
AV	2	2	2	2	2	2	3	3	3	3	4	4	4	5	5	6	6	6	5	4	3	4	3	3	4	
PK	8	7	7	7	8	8	10	9	10	10	11	12	13	13	13	14	13	13	12	9	6	7	8	7		14

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	4	1	2	1	5	12	10	9	8	8	8	10	9	8	8	11	10	7	7	5	7	4	3	7	12
2	6	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(CM)	2	2	2	3	4	4	4	4	4	4	4	5	5	4	3	2	4	6
3	7	4	1	2	1	0	1	0	1	3	3	4	1	2	3	5	4	5	5	4	2	1	2	1	3	7
4	2	2	2	5	7	10	10	8	10	11	10	9	10	11	12	13	14	11	9	6	6	8	8	5	8	14
5	4	3	3	2	1	1	6	9	9	12	13	13	14	15	14	15	12	14	13	9	7	8	3	3	8	15
6	2	0	1	2	3	4	4	5	3	4	4	4	7	7	7	8	10	9	7	5	4	4	1	2	5	10
7	1	1	2	7	9	6	7	9	11	10	11	9	8	11	12	9	9	10	9	8	8	8	8	8	8	12
8	8	8	8	8	8	6	4	4	5	4	5	6	7	6	7	9	8	9	8	5	4	4	6	4	6	9
9	2	2	3	3	3	3	1	2	2	3	3	4	3	3	4	4	4	7	5	4	1	1	1	4	3	7
10	4	3	3	0	1	3	1	1	1	2	2	3	3	1	4	5	2	2	1	2	1	4	4	1	2	5
11	2	2	1	2	1	2	2	1	1	3	3	4	4	4	4	6	7	6	7	7	5	2	1	0	3	7
12	2	2	1	1	1	2	3	1	2	1	2	2	5	6	7	5	6	4	2	1	1	6	1	1	3	7
13	4	3	4	2	4	6	9	5	5	5	6	7	8	8	8	7	9	8	5	2	1	3	5	7	6	9
14	1	4	5	3	0	2	1	1	3	2	1	0	4	4	4	3	9	9	8	4	4	3	1	1	3	9
15	1	2	2	1	1	1	1	1	2	3	4	4	4	4	5	4	5	4	4	3	1	2	2	2	3	5
16	1	1	2	1	1	2	1	1	1	1	2	3	2	3	2	4	3	1	4	4	4	4	3	6	2	6
17	2	2	2	1	0	1	1	1	2	2	3	2	4	3	3	4	4	4	5	2	2	2	6	4	3	6
18	3	1	4	5	4	4	4	3	3	3	3	4	3	1	2	3	4	6	6	7	5	3	2	4	4	7
19	2	(CM)	1	1	1	2	(CM)	1	2	1	2	3	3	4	4	5	6	4	11	11	6	4	4	5	4	11
20	3	5	3	4	3	2	1	1	2	1	1	1	1	2	1	1	3	4	4	4	4	3	2	1	2	5
21	1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	2	6	7	8	10	8	( )	10
22	4	4	4	3	2	2	2	2	2	2	2	3	3	4	7	3	8	5	1	2	4	4	5	3	3	8
23	2	0	3	3	1	3	3	2	2	1	1	1	4	7	12	5	4	6	8	4	2	3	3	1	3	12
24	2	1	1	1	1	1	1	0	1	0	1	1	2	4	8	4	4	3	3	4	4	3	1	0	2	8
25	1	(CA)	2	2	0	2	2	1	1	3	4	5	5	4	4	9	8	5	7	5	3	6	3	1	4	9
26	2	1	1	0	0	1	3	1	1	2	4	4	4	4	4	4	3	3	5	4	4	4	5	5	3	5
27	3	3	1	1	2	2	1	1	1	2	1	1	2	2	2	4	4	5	5	5	7	8	4	1	3	8
28	1	1	4	4	1	2	2	6	8	8	9	9	8	8	9	8	8	6	6	6	6	8	7	8	6	9
29	10	8	9	9	9	6	5	8	8	8	7	6	7	8	9	8	8	8	7	6	5	7	7	7	8	10
30	3	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	3
AV	3	3	3	3	3	3	3	3	4	4	4	4	5	5	6	6	7	6	6	5	4	5	4	3	4	
PK	10	8	9	9	9	10	12	10	11	12	13	13	14	15	14	15	14	14	13	11	8	8	10	8		15

WIND SPEED @10M
METERS/SEC.

CB TRACT
MRI AD20
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	1	1	2	3	2	1	5	4	5	5	5	6	5	7	9	8	5	6	2	3	1	1	1	4	9
2	1	2	2	2	2	2	3	1	2	2	3	3	4	2	2	3	2	2	2	2	1	2	1	1	2	4
3	1	2	1	1	1	2	2	1	2	3	4	2	2	3	4	4	4	4	2	2	1	2	3	3	2	4
4	3	5	5	4	4	3	3	4	5	5	6	5	6	5	7	6	6	6	5	1	2	3	3	2	4	7
5	2	2	2	2	2	4	4	4	6	6	6	6	7	7	6	7	6	8	7	7	5	5	2	2	5	8
6	1	2	2	2	3	3	2	2	3	4	5	4	4	4	3	5	5	5	3	1	2	2	2	3	3	5
7	2	2	3	4	2	2	2	4	5	5	5	6	5	5	6	5	5	5	4	2	2	2	3	3	4	6
8	3	3	3	3	3	2	2	4	4	4	5	6	6	4	6	6	5	6	4	3	2	2	1	0	4	6
9	1	0	1	1	2	2	1	2	3	3	4	4	2	3	2	3	3	3	3	2	1	2	3	3	2	4
10	3	3	2	2	3	3	3	2	3	3	4	3	1	2	3	2	2	2	1	2	1	2	1	3	2	4
11	3	2	2	2	(OE)	(OE)	(OE)	1	3	3	4	4	3	4	4	4	5	5	3	2	2	2	2	3	3	5
12	2	2	2	2	3	2	1	2	3	3	2	2	3	3	3	4	3	2	2	1	2	2	2	3	2	4
13	2	3	3	3	4	3	2	4	3	3	4	4	4	4	4	5	4	2	1	1	2	2	2	3	3	5
14	3	3	3	3	2	3	3	1	1	2	3	4	3	3	3	4	3	4	2	2	1	1	1	2	2	4
15	1	1	1	2	2	2	2	1	3	3	3	3	3	3	4	4	4	3	2	2	1	2	2	2	2	4
16	2	2	2	2	2	2	3	2	1	2	3	3	3	3	2	2	3	3	3	2	1	2	4	2	2	4
17	2	1	2	1	1	1	1	2	2	3	3	4	3	3	4	3	3	4	1	2	3	4	2	1	2	4
18	1	2	3	3	2	3	3	3	3	4	4	2	2	1	3	3	4	3	2	1	1	2	2	2	2	4
19	2	3	2	2	1	1	1	1	2	3	4	4	4	3	3	3	2	5	5	4	3	3	3	5	3	5
20	4	3	5	4	3	3	3	2	1	2	2	2	3	2	1	3	4	3	3	2	2	2	3	3	3	5
21	3	3	3	3	2	4	4	3	3	2	2	3	3	(IM)	(IM)	4	4	3	2	2	2	3	4	3	3	4
22	2	2	2	1	3	(OE)	3	(IM)	1	2	2	4	4	4	5	3	1	1	1	2	1	2	2	3	2	5
23	3	3	4	2	3	3	2	2	1	2	2	3	4	5	4	4	5	4	3	1	1	1	1	2	3	5
24	2	2	2	2	2	2	1	1	2	2	1	2	3	5	2	3	3	1	3	1	2	2	2	2	2	5
25	2	2	2	2	2	1	2	1	3	3	3	3	2	2	6	5	2	4	3	3	2	2	1	1	2	6
26	2	2	2	2	2	2	1	1	2	3	2	3	3	3	3	3	3	3	2	2	2	2	3	2	2	3
27	3	2	1	2	1	2	2	1	1	1	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	3
28	3	5	5	5	2	2	2	2	3	5	5	5	5	4	5	4	4	3	2	1	2	2	3	2	3	5
29	2	1	2	2	1	3	3	4	5	5	3	4	5	5	5	4	4	4	2	2	3	2	4	4	3	5
30	3	3	3	2	3	2	1	3	3	3	2	2	3	5	4	4	4	3	3	3	1	(IM)	(IM)	(IM)	3	5
AV	2	2	2	2	2	2	2	2	3	3	3	4	4	4	4	4	4	4	3	2	2	2	2	2	3	
PK	4	5	5	5	4	4	4	5	6	6	6	6	7	7	7	9	8	8	7	7	5	5	4	5		9

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	146	(CM)	139	283	146	176	187	193	208	231	225	215	231	246	270	274	298	312	304	288	306	284	227	239
2	136	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	61	341	341	299	293	262	249	256	299	303	266	325	328	303	308	308	226	297
3	189	245	145	221	112	224	156	311	353	334	264	203	243	300	298	295	317	291	302	302	274	211	207	174	256
4	126	73	61	163	184	187	190	191	195	197	199	196	211	213	212	233	238	237	243	228	200	190	198	276	201
5	248	231	203	192	125	111	160	173	186	189	203	188	195	199	200	218	220	228	241	295	293	303	337	101	207
6	180	151	168	212	199	181	217	241	305	233	234	244	230	242	235	218	228	239	234	217	205	212	279	215	221
7	(CM)	301	294	176	180	192	186	180	190	196	204	199	189	207	214	224	221	225	231	223	208	209	202	199	208
8	200	208	205	206	207	202	238	316	311	324	324	298	276	291	300	307	296	316	315	353	338	345	20	44	294
9	(CM)	231	251	240	230	231	307	314	300	321	319	324	311	305	335	320	269	242	247	356	202	201	187	172	272
10	229	214	227	0	135	207	103	92	66	12	327	327	278	325	324	345	314	319	0	21	289	342	30	229	328
11	232	186	238	247	79	194	238	79	315	310	328	313	307	316	312	302	285	297	311	322	319	229	207	(CM)	284
12	204	45	242	215	279	152	180	27	13	348	323	354	197	208	202	208	194	222	237	308	127	204	196	174	218
13	186	219	170	81	118	161	184	150	165	179	194	196	177	204	204	198	203	214	227	249	210	209	208	205	191
14	90	142	169	225	315	262	167	(CM)	284	350	3	135	123	253	263	281	323	333	6	74	357	87	191	228	274
15	50	263	199	208	236	194	45	214	304	304	319	350	337	306	304	307	333	345	42	125	208	164	166	194	277
16	219	261	(CM)	231	291	(CM)	(CM)	88	63	0	319	309	329	329	293	319	298	251	239	249	250	216	217	343	284
17	335	17	232	189	302	229	135	94	304	322	316	322	319	319	329	335	346	344	338	330	218	136	132	161	314
18	141	129	276	293	284	291	293	292	293	320	309	290	283	286	331	4	11	31	21	19	13	328	220	222	312
19	210	99	177	114	216	87	145	292	311	331	343	304	306	317	293	225	218	208	184	173	177	160	129	122	205
20	281	128	115	135	146	166	173	34	44	99	117	208	273	206	185	174	305	298	299	312	307	212	216	180	193
21	150	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	134	175	175	184	194	195	179	( )
22	114	142	155	150	96	110	118	87	85	76	175	242	170	150	171	128	166	200	22	70	100	196	177	125	135
23	112	90	107	105	110	147	136	265	92	9	303	357	268	255	232	217	107	82	64	339	44	150	134	216	114
24	227	157	232	234	90	225	167	262	325	329	4	351	340	203	210	212	238	266	262	273	279	238	208	265	249
25	279	(CA)	126	192	235	90	256	117	348	311	314	314	321	306	286	307	341	55	344	20	79	155	153	135	323
26	166	212	222	217	231	130	353	41	346	314	321	338	340	316	341	330	11	339	327	20	46	130	161	166	331
27	(CM)	126	328	132	117	228	(CM)	56	35	15	81	304	221	190	259	202	219	222	185	186	190	198	211	45	188
28	105	114	104	100	87	64	51	169	194	200	198	199	193	200	196	209	214	200	216	212	202	198	197	176	176
29	167	167	163	163	152	151	156	166	175	175	162	174	170	200	191	211	204	223	223	218	195	192	204	195	183
30	155	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )
PV	178	167	192	186	179	177	172	132	325	317	290	277	256	255	258	260	268	264	282	299	241	204	198	189	245

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	132	158	127	274	151	178	188	194	211	233	227	216	233	248	275	279	304	318	310	295	313	294	251	239
2	128	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	63	340	338	292	290	261	251	259	301	300	259	324	328	307	310	333	257	300
3	186	267	119	199	94	235	166	289	348	334	265	201	236	299	303	292	316	290	300	300	284	223	217	140	260
4	137	172	(CM)	181	191	187	190	192	197	199	200	197	212	215	215	235	240	240	246	233	211	199	207	287	207
5	266	245	226	208	117	158	165	173	186	190	204	190	198	200	202	220	222	230	244	300	300	309	337	88	214
6	177	(CM)	153	227	205	174	219	244	302	235	236	248	233	245	237	221	229	241	235	225	208	205	276	177	224
7	215	268	217	182	179	182	182	180	191	197	205	199	190	210	215	225	224	227	234	229	218	215	209	204	208
8	202	214	212	211	212	204	234	315	309	320	321	298	273	289	298	307	294	314	315	354	341	346	21	44	292
9	38	281	294	287	264	254	295	312	303	317	312	324	309	303	332	316	266	239	244	355	8	208	145	155	295
10	253	188	220	0	131	170	131	127	75	10	332	323	280	321	320	344	314	317	2	17	288	339	33	260	327
11	267	160	283	291	(CM)	163	261	(CM)	323	309	329	314	307	312	309	300	284	295	311	320	324	279	235	7	297
12	152	(CM)	279	(CM)	318	149	152	86	40	351	321	355	197	208	204	210	195	224	235	286	112	207	210	131	205
13	178	184	172	173	172	180	187	152	165	179	194	196	178	204	206	200	204	214	227	248	217	201	208	208	193
14	101	122	154	202	8	277	182	328	299	346	0	161	120	251	259	280	320	331	8	75	359	79	157	201	313
15	28	37	135	205	243	237	(CM)	225	307	304	317	349	336	305	303	307	331	343	43	123	197	143	106	143	309
16	(CM)	344	30	243	325	315	254	106	72	357	318	311	330	326	293	316	296	256	242	251	250	225	233	343	299
17	340	32	243	196	299	(CM)	124	80	302	321	315	319	319	314	327	334	345	344	338	336	219	142	131	154	323
18	147	122	287	298	289	296	299	296	297	319	308	290	282	291	328	4	12	31	22	19	14	341	243	236	315
19	229	68	154	120	225	209	97	289	311	326	344	305	308	319	292	224	219	207	186	175	176	161	140	117	216
20	280	122	106	120	138	171	207	66	53	104	118	200	273	204	182	169	307	298	298	311	312	218	223	208	195
21	120	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	127	158	171	188	199	199	183	( )
22	117	127	149	180	133	109	148	129	91	80	173	240	182	144	173	126	161	202	23	69	95	176	183	139	141
23	145	102	109	114	106	127	135	223	90	7	313	350	264	254	231	218	104	79	61	338	42	130	115	214	116
24	253	125	219	286	71	166	169	240	331	351	3	348	334	205	212	212	241	267	263	272	289	281	222	333	263
25	317	(CA)	120	135	289	45	272	180	341	310	312	313	318	306	284	306	339	56	343	22	79	147	172	129	331
26	108	212	239	222	222	247	9	22	326	312	320	335	338	316	339	329	9	340	328	19	50	114	139	150	331
27	153	143	(CM)	101	129	131	135	84	39	19	94	286	220	189	260	205	221	223	187	188	190	195	11	95	161
28	192	118	107	101	101	169	297	185	197	199	199	201	194	202	197	211	216	201	216	213	202	198	191	176	189
29	162	157	152	149	145	146	151	166	175	175	163	174	169	201	194	212	207	224	223	220	194	191	199	197	181
30	143	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )
PV	173	151	180	187	187	183	186	178	325	316	289	274	256	255	258	261	269	265	284	299	259	208	198	177	253

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	131	178	131	242	167	181	189	195	213	233	228	216	233	247	275	279	303	317	307	296	312	299	271	240
2	131	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(CM)	341	339	292	290	262	250	259	301	308	264	330	332	316	319	337	302	303
3	188	284	97	198	63	236	195	184	350	341	274	201	235	303	303	299	320	296	307	307	302	242	225	205	265
4	155	207	192	185	187	186	190	193	198	201	201	199	213	216	215	235	240	240	246	236	219	207	213	287	210
5	277	255	245	233	158	180	169	175	188	191	205	191	199	200	202	218	222	231	244	298	299	307	331	80	220
6	194	311	159	241	218	183	224	246	306	239	238	248	234	245	237	221	229	242	235	233	222	208	185	174	227
7	183	230	208	181	176	176	180	182	191	198	205	201	193	210	215	224	223	227	235	231	224	220	215	213	206
8	212	220	221	221	225	214	232	322	315	325	327	299	279	295	304	312	299	320	320	359	349	352	28	48	298
9	47	336	310	305	283	274	300	318	307	325	317	331	318	309	337	321	271	246	252	359	325	200	126	144	307
10	265	169	205	84	245	244	152	113	86	13	339	325	289	323	325	349	322	324	4	11	304	344	42	301	329
11	298	72	45	291	281	208	267	255	344	315	337	322	314	318	315	305	291	300	316	323	329	318	261	109	309
12	145	195	292	14	349	139	141	141	73	10	324	4	200	209	207	211	197	225	230	240	121	216	219	160	197
13	180	177	170	188	191	188	191	160	170	180	197	195	181	204	206	202	204	214	227	247	237	209	219	221	198
14	195	120	149	201	220	293	191	310	303	345	347	174	125	256	256	283	323	336	14	80	7	81	135	180	251
15	16	43	49	199	242	262	265	256	308	313	323	351	341	311	310	315	336	349	47	119	176	130	96	127	330
16	81	341	12	118	330	287	268	184	80	10	329	319	341	331	298	322	302	262	245	253	248	244	254	348	306
17	352	39	261	205	270	69	100	81	310	328	325	326	326	319	333	340	351	347	343	340	235	155	137	145	337
18	151	135	295	300	293	298	301	296	295	325	316	297	292	299	336	7	18	36	29	26	20	354	279	263	322
19	253	(CM)	141	135	242	248	(CM)	289	320	333	344	314	318	326	300	230	224	204	188	177	176	165	155	128	236
20	298	132	118	124	145	143	175	120	64	110	122	187	278	200	186	168	304	304	305	317	320	243	256	251	194
21	122	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	122	148	171	194	202	202	188	( )
22	129	127	152	201	192	122	179	182	106	88	177	239	195	143	180	118	159	205	11	68	97	164	190	152	154
23	171	144	129	141	111	120	126	193	91	6	323	355	270	260	238	224	107	83	66	345	43	123	108	192	124
24	272	141	161	268	62	90	235	174	335	14	10	344	339	208	214	214	242	263	266	279	300	322	284	25	279
25	299	(CA)	119	116	243	332	278	231	333	318	320	320	324	315	290	312	345	61	348	28	82	145	169	143	324
26	103	201	190	160	250	274	191	282	295	318	330	338	341	324	345	333	10	347	333	22	56	109	132	144	325
27	158	143	151	123	133	133	115	121	51	31	111	287	227	190	258	208	222	222	190	192	189	200	198	218	175
28	174	158	119	113	156	202	227	197	199	199	201	202	195	204	198	213	216	202	220	214	210	206	193	177	193
29	156	148	143	143	144	146	154	169	177	176	167	176	172	202	195	212	209	225	222	219	199	192	201	202	181
30	153	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )
PV	178	161	164	177	216	199	199	201	324	326	294	278	260	258	260	264	272	268	287	299	269	214	203	184	254

WIND DIRECTION @10M
DEGREES

CB TRACT
MRI AD20
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	101	115	246	295	102	92	99	150	184	212	203	199	282	282	262	275	275	283	280	292	294	8	93	93	197
2	83	91	97	114	96	116	119	221	282	271	263	261	264	248	278	299	292	298	319	3	295	81	92	78	190
3	101	110	101	100	114	113	130	210	279	280	153	156	258	301	304	303	279	279	288	34	87	104	115	114	180
4	116	123	125	123	116	101	103	160	173	168	156	176	196	199	221	224	229	233	256	139	89	103	98	99	155
5	95	97	99	94	97	125	116	110	148	163	181	163	165	170	172	209	204	234	250	287	286	298	340	86	174
6	111	99	114	91	119	120	104	331	293	276	268	260	240	253	230	234	228	226	239	136	72	95	86	109	180
7	106	101	96	111	90	88	89	125	173	188	175	186	186	185	174	200	230	234	242	190	89	86	88	93	147
8	88	86	96	100	95	96	310	273	278	278	279	288	273	279	283	293	286	290	303	321	307	275	252	139	232
9	44	85	98	93	89	86	90	285	269	271	273	270	261	270	269	262	269	269	313	10	102	107	112	116	180
10	111	107	91	98	113	126	124	165	287	272	267	278	207	297	319	252	311	13	7	9	26	345	118	108	169
11	116	108	92	101	(OE)	(OE)	(OE)	80	270	270	272	282	272	278	278	285	278	282	286	59	94	101	96	117	191
12	107	81	107	112	116	19	285	284	275	288	59	175	167	178	211	160	286	6	34	78	84	85	104	117	142
13	84	93	97	101	109	119	103	115	132	178	155	151	186	170	170	152	174	232	305	78	95	88	94	105	137
14	123	109	110	119	99	103	116	246	134	261	76	93	161	325	156	309	9	360	49	89	11	41	26	94	134
15	97	94	90	89	114	120	102	284	265	297	314	301	301	292	290	288	323	360	120	102	89	111	110	111	194
16	94	94	99	92	92	94	121	124	126	257	262	268	262	287	253	273	279	267	285	355	75	93	303	290	198
17	8	272	67	36	100	70	77	279	278	262	265	262	278	291	281	314	293	307	313	13	35	104	100	97	183
18	269	284	263	270	273	265	261	264	278	265	265	256	190	237	320	358	346	353	349	329	107	107	98	99	254
19	104	114	98	109	104	82	80	277	277	266	266	267	288	283	235	214	170	147	113	106	104	108	111	108	168
20	116	112	120	119	118	111	115	115	105	252	209	258	7	86	141	263	267	275	277	36	108	114	113	118	148
21	110	114	118	115	94	117	122	118	177	281	220	337	25	(IM)	(IM)	98	92	143	132	110	104	66	75	98	130
22	94	113	96	84	107	(OE)	121	(IM)	98	280	268	133	105	89	89	119	101	110	79	135	71	97	104	105	118
23	119	114	112	92	114	116	109	122	157	267	253	228	244	239	140	101	78	59	284	58	55	96	90	101	139
24	108	100	90	91	99	93	130	121	284	278	250	281	186	194	153	208	217	237	268	17	106	115	103	100	159
25	99	117	88	80	88	84	110	237	269	274	333	291	164	266	306	336	184	312	304	125	36	36	87	90	180
26	92	89	84	87	93	86	76	62	286	268	301	292	307	300	273	172	290	301	354	23	77	114	112	88	176
27	118	81	75	96	93	73	99	86	262	88	303	314	124	225	169	183	195	165	162	99	77	78	85	87	139
28	118	124	126	126	95	92	88	282	259	167	180	177	158	191	205	183	189	212	208	116	102	90	98	73	152
29	92	95	55	128	114	99	105	122	139	135	158	127	177	157	171	200	223	211	194	105	93	96	109	110	134
30	115	110	108	113	115	99	99	277	230	144	121	137	102	136	166	184	292	334	81	99	87	(IM)	(IM)	(IM)	150
PV	105	114	109	113	109	104	124	190	222	239	225	229	201	231	225	232	230	234	223	118	108	112	118	108	168

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	146	***	139	283	146	176	187	193	208	231	225	215	231	246	270	274	298	312	304	288	306	284	227	229	240	3.1
2	***	***	***	***	***	***	61	341	341	299	293	262	249	256	299	303	266	325	328	303	308	308	226	281	293	1.7
3	245	145	221	112	224	156	311	353	334	264	203	243	300	298	295	317	291	302	302	274	211	207	174	155	273	1.1
4	126	73	61	163	184	187	190	191	195	197	199	196	211	213	212	233	238	237	243	228	200	190	198	276	209	4.4
5	248	231	203	192	125	111	160	173	186	189	203	188	195	199	200	218	220	228	241	295	293	303	337	101	213	4.3
6	180	151	168	212	199	181	217	241	305	233	234	244	230	242	235	218	228	239	234	217	205	212	279	215	227	2.7
7	***	301	294	176	180	192	186	180	190	196	204	199	189	207	214	224	221	225	231	223	208	209	202	199	205	4.7
8	200	208	205	206	207	202	238	316	311	324	324	298	276	291	300	307	296	316	315	353	338	345	20	44	298	2.4
9	***	231	251	240	230	231	307	314	300	321	319	324	311	305	335	320	269	242	247	356	202	201	187	172	275	1.3
10	214	227	0	135	207	103	92	66	12	327	327	278	325	324	345	314	319	0	21	289	342	30	229	232	325	0.7
11	186	238	247	79	194	238	79	315	310	328	313	307	316	312	302	285	297	311	322	319	229	207	***	204	299	1.7
12	45	242	215	279	152	180	27	13	348	323	354	197	208	202	208	194	222	237	308	127	204	196	174	186	211	1.1
13	219	170	81	118	161	184	150	165	179	194	196	177	204	204	198	203	214	227	249	210	209	208	205	90	193	2.8
14	142	169	225	315	262	167	***	284	350	3	135	123	253	263	281	323	333	6	74	357	87	191	228	50	322	0.5
15	263	199	208	236	194	45	214	304	304	319	350	337	306	304	307	333	345	42	125	208	164	166	194	219	314	0.9
16	261	***	231	291	***	***	88	63	0	319	309	329	329	293	319	298	251	239	249	250	216	217	343	335	294	1.0
17	17	232	189	302	229	135	94	304	322	316	322	319	319	329	335	346	344	338	330	218	136	132	161	141	318	0.6
18	129	276	293	284	291	293	292	293	320	309	290	283	286	331	4	11	31	21	19	13	328	220	222	210	322	1.5
19	99	177	114	216	87	145	292	311	331	343	304	306	317	293	225	218	208	184	173	177	160	129	122	136	200	1.2
20	128	115	135	146	166	173	34	44	99	117	208	273	206	185	174	305	298	299	312	307	212	216	180	150	199	0.4
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	134	175	175	184	194	195	179	114	****	****
22	142	155	150	96	110	118	87	85	76	175	242	170	150	171	128	166	200	22	70	100	196	177	125	112	148	1.5
23	90	107	105	110	147	136	265	92	9	303	357	268	255	232	217	107	82	64	339	44	150	134	216	227	143	0.5
24	157	232	234	90	225	167	262	325	329	4	351	340	203	210	212	238	266	262	273	279	238	208	265	279	241	1.0
25	***	126	192	235	90	256	117	348	311	314	314	321	306	286	307	341	55	344	20	79	155	153	135	166	331	1.1
26	212	222	217	231	130	353	41	346	314	321	338	340	316	341	330	11	339	327	20	46	130	161	166	***	342	0.8
27	126	328	132	117	228	***	56	35	15	81	304	221	190	259	202	219	222	185	186	190	198	211	45	105	198	1.0
28	114	104	100	87	64	51	169	194	200	198	199	193	200	196	209	214	200	216	212	202	198	197	176	167	190	3.4
29	167	163	163	152	151	156	166	175	175	162	174	170	200	191	211	204	223	223	218	195	192	204	195	189	185	4.2
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	126	****	****
VD	162	179	179	179	182	180	177	201	232	234	241	230	232	236	247	254	257	269	265	257	212	202	195	168	226	
VV	1.0	0.9	0.7	0.7	1.1	1.3	1.0	1.0	0.9	1.3	1.7	1.7	2.4	2.8	2.5	2.4	2.1	1.8	1.5	0.8	1.3	1.4	1.1	0.9		1.2

TOTAL NUMBER OF OBSERVATIONS = 664

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	132	158	127	274	151	178	188	194	211	233	227	216	233	248	275	279	304	318	310	295	313	294	251	253	244	3.9
2	***	***	***	***	***	***	63	340	338	292	290	261	251	259	301	300	259	324	328	307	310	333	257	280	296	2.4
3	267	119	199	94	235	166	289	348	334	265	201	236	299	303	292	316	290	300	300	284	223	217	140	143	277	1.4
4	137	172	***	181	191	187	190	192	197	199	200	197	212	215	215	235	240	240	246	233	211	199	207	287	213	6.7
5	266	245	226	208	117	158	165	173	186	190	204	190	198	200	202	220	222	230	244	300	300	309	337	88	216	5.7
6	177	***	153	227	205	174	219	244	302	235	236	248	233	245	237	221	229	241	235	225	208	205	276	177	228	3.9
7	215	268	217	182	179	182	182	180	191	197	205	199	190	210	215	225	224	227	234	229	218	215	209	204	207	6.6
8	202	214	212	211	212	204	234	315	309	320	321	298	273	289	298	307	294	314	315	354	341	346	21	44	289	3.3
9	38	281	294	287	264	254	295	312	303	317	312	324	309	303	332	316	266	239	244	355	8	208	145	155	287	1.6
10	188	220	0	131	170	131	127	75	10	332	323	280	321	320	344	314	317	2	17	288	339	33	260	267	326	1.0
11	160	283	291	***	163	261	***	323	309	329	314	307	312	309	300	284	295	311	320	324	279	235	7	152	305	2.5
12	***	279	***	318	149	152	86	40	351	321	355	197	208	204	210	195	224	235	286	112	207	210	131	178	209	1.6
13	184	172	173	172	180	187	152	165	179	194	196	178	204	206	200	204	214	227	248	217	201	208	208	101	195	4.2
14	122	154	202	8	277	182	328	299	346	0	161	120	251	259	280	320	331	8	75	359	79	157	201	28	334	0.7
15	37	135	205	243	237	***	225	307	304	317	349	336	305	303	307	331	343	43	123	197	143	106	143	***	325	1.2
16	344	30	243	325	315	254	106	72	357	318	311	330	326	293	316	296	256	242	251	250	225	233	343	340	295	1.3
17	32	243	196	299	***	124	80	302	321	315	319	319	314	327	334	345	344	338	336	219	142	131	154	147	322	0.8
18	122	287	298	289	296	299	296	297	319	308	290	282	291	328	4	12	31	22	19	14	341	243	236	229	325	2.1
19	68	154	120	225	209	97	289	311	326	344	305	308	319	292	224	219	207	186	175	176	161	140	117	128	196	1.6
20	122	106	120	138	171	207	66	53	104	118	200	273	204	182	169	307	298	298	311	312	218	223	208	120	187	0.4
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	127	158	171	188	199	199	183	117	****	****
22	127	149	180	133	109	148	129	91	80	173	240	182	144	173	126	161	202	23	69	95	176	183	139	145	151	2.2
23	102	109	114	106	127	135	223	90	7	313	350	264	254	231	218	104	79	61	338	42	130	115	214	253	138	0.7
24	125	219	286	71	166	169	240	331	351	3	348	334	205	212	212	241	267	263	272	289	281	222	333	317	248	1.1
25	***	120	135	289	45	272	180	341	310	312	313	318	306	284	306	339	56	343	22	79	147	172	129	108	336	1.5
26	212	239	222	222	247	9	22	326	312	320	335	338	316	339	329	9	340	328	19	50	114	139	150	153	349	0.9
27	143	***	101	129	131	135	84	39	19	94	286	220	189	260	205	221	223	187	188	190	195	11	95	192	193	1.5
28	118	107	101	101	169	297	185	197	199	199	201	194	202	197	211	216	201	218	213	202	198	191	176	162	192	4.9
29	157	152	149	145	146	151	166	175	175	163	174	169	201	194	212	207	224	223	220	194	191	199	197	186	183	5.9
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	137	****	****
VD	152	169	174	184	184	185	183	201	231	234	241	231	232	236	249	254	257	268	265	261	211	201	195	167	225	
VV	1.4	1.2	1.1	1.0	1.5	1.9	1.7	1.3	1.3	1.8	2.2	2.4	3.3	3.9	3.4	3.4	2.9	2.6	2.1	1.2	1.9	1.7	1.4	1.4		1.7

TOTAL NUMBER OF OBSERVATIONS = 664

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	131	178	131	242	167	181	189	195	213	233	228	216	233	247	275	279	303	317	307	296	312	299	271	265	243	4.5
2	***	***	***	***	***	***	***	341	339	292	290	262	250	259	301	308	264	330	332	316	319	337	302	298	302	3.1
3	284	97	198	63	236	195	184	350	341	274	201	235	303	303	299	320	296	307	307	302	242	225	205	153	284	1.6
4	155	207	192	185	187	186	190	193	198	201	201	199	213	216	215	235	240	240	246	236	219	207	213	287	214	7.6
5	277	255	245	233	158	180	169	175	188	191	205	191	199	200	202	218	222	231	244	298	299	307	331	80	217	6.5
6	194	311	159	241	218	183	224	246	306	239	238	248	234	245	237	221	229	242	235	233	222	208	185	174	231	4.3
7	183	230	208	181	176	176	180	182	191	198	205	201	193	210	215	224	223	227	235	231	224	220	215	213	207	7.7
8	212	220	221	221	225	214	232	322	315	325	327	299	279	295	304	312	299	320	320	359	349	352	28	48	290	3.8
9	47	336	310	305	283	274	300	318	307	325	317	331	318	309	337	321	271	246	252	359	325	200	126	144	302	1.9
10	169	205	84	245	244	152	113	86	13	339	325	289	323	325	349	322	324	4	11	304	344	42	301	298	328	1.2
11	72	45	291	281	208	267	255	344	315	337	322	314	318	315	305	291	300	316	323	329	318	261	109	145	310	2.6
12	195	292	14	349	139	141	141	73	10	324	4	200	209	207	211	197	225	230	240	121	216	219	160	180	204	1.9
13	177	170	188	191	188	191	160	170	180	197	195	181	204	206	202	204	214	227	247	237	209	219	221	195	198	5.1
14	120	149	201	220	293	191	310	303	345	347	174	125	256	256	283	323	336	14	80	7	81	135	180	16	342	0.8
15	43	49	199	242	262	265	256	308	313	323	351	341	311	310	315	336	349	47	119	176	130	96	127	81	339	1.3
16	341	12	118	330	287	268	164	80	10	329	319	341	331	298	322	302	262	245	253	248	244	254	348	352	302	1.6
17	39	261	205	270	69	100	81	310	328	325	326	326	319	333	340	351	347	343	340	235	155	137	145	151	340	0.9
18	135	295	300	293	298	301	296	295	325	316	297	292	299	336	7	18	36	29	26	20	354	279	263	253	330	2.5
19	***	141	135	242	248	***	289	320	333	344	314	318	326	300	230	224	204	188	177	176	165	155	128	131	199	2.0
20	132	118	124	145	143	175	120	64	110	122	187	278	200	186	168	304	304	305	317	320	243	256	251	122	194	0.4
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	122	148	171	194	202	202	188	129	****	****
22	127	152	201	192	122	179	182	106	88	177	239	195	143	180	118	159	205	11	68	97	164	190	152	171	161	2.6
23	144	129	141	111	120	126	193	91	6	323	355	270	260	238	224	107	83	66	345	43	123	108	192	272	145	0.6
24	141	161	268	62	90	235	174	335	14	10	344	339	208	214	214	242	263	266	279	300	322	284	25	299	257	1.3
25	***	119	116	243	332	278	231	333	318	320	320	324	315	290	312	345	61	348	28	82	145	169	143	103	343	1.7
26	201	190	160	250	274	191	282	295	318	330	338	341	324	345	333	10	347	333	22	56	109	132	144	158	360	0.9
27	143	151	123	133	133	115	121	51	31	111	287	227	190	258	208	222	222	190	192	189	200	198	218	174	191	2.1
28	158	119	113	156	202	227	197	199	199	201	202	195	204	198	213	216	202	220	214	210	206	193	177	156	197	5.9
29	148	143	143	144	146	154	169	177	176	167	176	172	202	195	212	209	225	222	219	199	192	201	202	188	182	6.8
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	155	****	****
VD	157	169	183	201	196	191	192	202	230	237	244	234	234	238	251	256	256	270	265	266	220	207	198	171	227	
VV	1.5	1.3	1.3	1.4	1.8	2.6	2.3	1.5	1.3	1.9	2.4	2.5	3.5	4.3	3.6	3.6	3.1	2.7	2.2	1.4	2.1	2.2	1.7	1.5		1.9

TOTAL NUMBER OF OBSERVATIONS = 671

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	15	(CM)	43	21	7	6	8	10	14	14	14	12	14	18	12	11	11	11	11	11	8	9	6	13	43
2	5	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	20	16	32	39	29	28	19	21	15	23	25	10	6	9	8	17	3	18	39
3	7	12	11	22	18	8	9	20	18	17	25	16	44	31	21	19	22	19	15	10	8	4	11	25	17	44
4	10	13	15	33	9	6	7	11	11	10	14	17	15	14	11	13	11	11	11	7	6	4	4	22	12	33
5	11	10	7	11	25	23	16	11	13	14	14	14	16	12	12	11	13	12	10	11	10	11	13	9	13	25
6	12	22	12	13	5	9	11	14	34	27	22	29	18	15	17	14	12	12	10	6	4	13	23	13	15	34
7	(CM)	27	29	8	7	10	8	10	10	12	14	17	17	14	13	15	13	11	9	9	8	6	5	5	12	29
8	4	4	14	7	6	14	22	11	12	22	17	17	21	16	13	13	13	11	10	9	15	13	11	15	13	22
9	(CM)	8	8	5	4	5	19	18	21	27	35	19	31	35	24	29	22	12	12	6	9	7	20	11	17	35
10	6	27	18	24	19	21	15	12	19	14	30	21	32	45	24	14	30	22	19	15	16	8	12	8	20	45
11	16	15	17	16	15	6	14	17	44	17	21	30	24	24	20	18	17	14	12	8	7	7	7	(CM)	17	44
12	10	16	15	37	17	17	22	17	12	20	15	26	24	17	17	16	14	16	17	23	15	4	18	11	17	37
13	13	32	32	27	13	15	6	7	13	14	13	14	11	12	12	15	14	11	10	9	18	3	7	9	14	32
14	18	5	11	18	29	13	7	(CM)	17	16	33	36	22	13	28	23	15	12	14	11	8	16	14	9	17	36
15	18	20	7	8	16	11	8	19	15	23	15	17	18	16	11	13	11	12	13	11	6	11	12	10	13	23
16	16	15	(CM)	10	21	(CM)	(CM)	10	22	28	24	32	26	34	37	22	30	33	25	12	16	7	19	12	21	37
17	16	21	7	20	11	16	11	29	22	22	25	29	24	35	35	18	17	10	9	12	6	23	10	10	18	35
18	9	8	8	8	7	8	8	10	11	11	18	12	14	33	39	22	18	11	10	9	6	11	4	3	12	39
19	27	29	25	13	15	10	8	16	20	31	30	23	26	24	16	12	10	14	9	8	10	12	8	6	17	31
20	16	6	5	6	5	18	14	26	16	35	36	30	37	29	29	33	17	15	13	12	7	3	8	10	18	37
21	15	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	22	6	7	10	10	13	( )	22
22	11	6	6	12	14	5	16	11	13	22	23	25	14	8	8	14	8	21	18	9	9	9	14	18	13	25
23	8	7	7	5	5	6	8	14	12	26	31	42	23	12	10	19	12	11	10	8	8	6	11	15	13	42
24	13	14	12	10	12	14	9	10	18	31	38	34	32	18	11	21	17	21	16	8	8	8	12	15	17	38
25	12	(CA)	10	16	13	16	15	15	21	14	16	17	14	16	9	13	11	13	10	12	19	10	11	8	14	21
26	16	10	16	11	9	9	6	25	33	17	18	24	26	29	27	25	22	22	14	10	5	4	4	4	16	33
27	(CM)	24	9	12	14	16	(CM)	15	14	18	35	43	32	41	27	30	26	20	16	10	5	5	19	14	20	43
28	14	11	6	6	5	17	17	12	9	10	10	12	14	15	14	17	14	15	14	9	6	4	5	5	11	17
29	4	5	4	5	7	14	7	8	10	11	14	18	19	14	17	19	15	16	13	11	5	4	7	7	11	19
30	9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	9
AV	12	15	12	15	13	12	12	15	17	20	23	23	23	22	19	18	16	15	13	10	9	8	11	11	15	
PK	27	32	32	43	29	23	22	29	44	35	39	43	44	45	39	33	30	33	25	23	19	23	23	25		45

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	9	23	33	25	7	5	8	9	12	13	13	12	12	17	11	9	9	10	9	10	7	8	8	12	33
2	3	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	28	16	28	35	26	24	17	18	12	19	23	9	6	7	8	6	10	16	35
3	4	8	10	20	16	11	6	18	21	15	22	14	51	32	19	16	20	16	13	9	11	10	14	40	17	51
4	19	60	(CM)	22	5	5	7	10	10	9	12	16	15	13	11	12	11	11	9	6	4	3	3	15	13	60
5	13	11	8	7	13	28	11	9	13	12	13	13	14	11	11	10	11	11	10	10	9	9	12	7	12	28
6	12	(CM)	12	17	6	5	10	13	32	25	26	24	15	13	15	14	11	11	9	4	3	16	26	23	15	32
7	28	27	19	4	5	9	8	10	9	11	13	15	16	14	11	13	12	9	8	7	5	5	3	3	11	28
8	2	2	6	4	3	15	21	10	9	20	17	16	19	15	13	11	11	10	9	7	15	13	11	13	11	21
9	17	21	7	6	6	5	30	16	20	24	28	17	27	32	18	23	22	10	11	5	12	6	26	4	16	32
10	6	19	27	19	16	9	15	10	17	13	24	19	26	47	20	13	31	21	18	17	17	8	10	19	18	47
11	15	16	18	16	(CM)	7	9	(CM)	37	15	17	25	21	26	19	15	14	13	10	7	4	9	12	7	15	37
12	12	(CM)	14	(CM)	21	18	21	27	11	24	17	28	21	15	16	15	13	14	16	21	11	3	31	19	18	31
13	9	20	14	31	18	14	5	6	13	13	12	13	11	11	11	13	13	10	9	9	7	2	3	4	11	31
14	20	4	5	26	21	10	11	20	11	18	30	32	19	12	26	20	14	12	12	9	6	9	16	9	16	32
15	8	12	13	5	26	8	(CM)	24	14	21	13	15	17	14	10	12	11	10	11	9	7	11	8	7	12	26
16	(CM)	12	13	14	8	9	13	9	24	27	24	27	26	33	31	21	25	25	21	12	10	6	14	9	18	33
17	15	16	9	16	10	(CM)	11	28	27	18	22	26	20	32	37	17	16	8	9	14	8	27	8	10	18	37
18	7	7	7	6	6	7	7	8	10	10	15	10	12	31	38	17	17	11	9	8	6	12	10	5	12	38
19	18	26	14	9	12	32	10	13	17	28	32	24	23	22	15	10	8	13	8	7	9	10	8	4	16	32
20	10	3	3	4	4	6	16	16	13	40	37	28	40	28	25	28	16	12	12	10	5	5	10	12	16	40
21	10	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	18	5	7	10	9	12	( )	18
22	10	4	4	9	27	4	20	16	13	19	20	22	13	7	7	14	7	18	26	9	7	9	11	15	13	27
23	15	12	6	7	4	5	5	8	10	19	35	40	21	11	9	16	10	9	9	8	8	4	9	13	12	40
24	12	6	10	13	7	11	9	12	21	31	32	30	29	20	9	18	16	19	15	6	5	13	17	23	16	32
25	13	(CA)	5	13	22	18	8	15	22	13	14	15	12	13	7	11	10	12	8	11	20	8	11	21	13	22
26	11	8	15	19	6	11	8	17	40	15	17	23	24	27	23	22	22	20	13	10	4	3	4	2	15	40
27	17	15	(CM)	12	15	13	10	13	16	21	29	39	24	36	26	28	24	17	14	9	3	3	37	39	20	39
28	23	13	4	4	6	53	46	16	7	9	9	11	12	14	14	16	14	14	13	8	5	3	2	3	13	53
29	3	4	3	5	5	8	6	7	9	10	11	18	17	13	15	19	13	15	12	9	5	3	4	4	9	19
30	8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	8
AV	12	14	11	13	12	13	13	14	17	19	21	21	21	20	18	16	15	14	12	9	8	8	12	12	14	
PK	28	60	27	33	27	53	46	28	40	40	37	40	51	47	38	28	31	25	26	21	20	27	37	40		60

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	5	22	28	25	8	4	7	9	10	12	11	11	11	16	10	9	10	9	8	8	6	8	6	11	28
2	2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(CM)	21	27	32	30	22	15	14	13	18	17	9	5	5	6	3	5	14	32
3	3	4	8	14	10	16	8	20	22	13	22	14	48	34	16	15	18	15	12	9	10	15	7	21	16	48
4	23	20	18	9	6	4	6	9	8	8	11	15	13	12	10	11	10	10	8	5	3	2	2	10	10	23
5	13	13	6	9	22	17	7	8	12	10	12	12	12	10	10	10	10	10	9	10	9	9	12	5	11	22
6	13	21	19	16	8	5	8	13	28	23	23	26	13	13	15	13	10	9	8	4	3	7	17	9	14	28
7	35	25	16	4	2	6	7	9	7	10	11	13	16	13	11	12	11	8	8	6	4	4	2	1	10	35
8	1	1	3	2	3	15	16	9	9	18	15	14	17	14	12	10	11	9	8	7	15	13	10	13	10	18
9	13	12	4	3	5	4	28	17	18	20	28	15	23	29	17	20	21	9	10	6	11	10	13	5	14	29
10	5	13	9	23	16	9	21	9	14	13	23	20	25	44	17	12	23	19	18	19	21	9	9	23	17	44
11	14	8	15	8	10	11	9	25	37	13	16	18	18	22	19	14	14	13	9	6	4	8	12	16	14	37
12	6	13	7	5	16	17	14	14	11	31	18	29	24	13	14	14	11	13	21	34	9	2	24	25	16	34
13	6	12	6	19	10	6	4	6	11	12	11	12	9	9	9	13	11	9	9	8	5	2	2	2	8	19
14	23	4	3	6	19	9	11	12	8	17	30	37	15	11	26	18	12	11	12	8	5	6	6	11	13	37
15	6	8	10	8	17	11	9	13	13	19	12	14	16	14	9	11	9	10	11	8	10	7	4	6	11	19
16	15	11	8	10	16	10	10	16	25	24	20	23	23	34	31	18	22	27	23	11	11	6	5	10	17	34
17	15	13	18	17	13	17	11	27	27	20	19	24	16	23	29	14	15	8	8	16	21	23	7	7	17	29
18	6	6	6	6	6	6	6	7	9	9	13	8	12	27	34	16	19	10	8	7	6	10	9	4	10	34
19	10	(CM)	12	10	11	10	(CM)	13	16	26	29	19	19	18	13	9	7	11	7	6	8	7	7	3	12	29
20	9	3	5	3	5	10	17	15	15	34	34	30	44	29	24	24	14	10	11	9	3	5	12	9	16	44
21	11	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	15	4	6	9	7	11	( )	15
22	10	4	4	6	30	11	10	10	14	15	17	21	12	7	6	14	6	16	29	9	7	8	8	14	12	30
23	9	32	16	7	19	6	5	12	9	20	27	39	21	11	8	15	9	7	7	8	6	5	7	10	13	39
24	12	12	18	9	9	13	14	11	24	33	32	28	25	20	8	16	15	19	13	5	4	12	36	15	17	36
25	13	(CA)	7	7	14	11	6	14	26	11	11	13	11	11	7	10	9	12	8	11	19	7	9	22	12	26
26	7	15	13	17	21	12	12	26	42	14	15	19	19	20	20	20	22	17	11	10	4	3	4	4	15	42
27	5	8	12	8	6	6	6	7	21	34	27	41	25	36	29	27	23	16	13	9	3	1	13	37	17	41
28	40	21	7	5	30	19	22	14	5	7	7	10	11	12	13	16	12	12	11	7	3	1	1	2	12	40
29	2	3	2	3	4	6	6	6	8	9	10	17	15	11	14	16	12	13	11	8	3	2	3	3	8	17
30	8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	8
AV	12	11	10	10	13	10	11	13	17	18	19	20	19	19	16	15	14	12	12	9	8	7	9	11	13	
PK	40	32	22	28	30	19	28	27	42	34	34	41	48	44	34	27	23	27	29	34	21	23	36	37		48

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	10	9	8	8	8	11	14	16	17	18	18	19	21	21	18	18	17	16	14	13	12	10	8	14	21
2	8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	10	13	15	16	17	17	17	23	17	18	16	14	13	11	10	9	14	23
3	20	8	8	7	6	6	6	8	11	13	13	12	17	18	18	19	19	19	19	18	16	13	12	9	13	20
4	9	7	6	7	8	11	13	16	17	18	19	21	22	22	23	23	22	21	19	16	13	13	14	9	15	23
5	9	8	6	6	4	6	11	15	17	18	19	21	21	21	21	21	19	20	17	13	9	7	4	3	13	21
6	2	1	1	2	2	3	6	9	11	13	14	14	17	17	18	18	17	17	16	13	9	8	7	7	10	18
7	6	6	6	6	8	9	12	15	16	17	18	19	21	21	21	22	21	21	19	16	13	12	12	11	14	22
8	10	9	8	8	8	8	11	13	14	17	18	18	19	18	18	18	18	17	16	12	9	6	7	6	13	19
9	4	2	2	0	-1	0	3	7	9	12	15	16	18	19	20	21	21	20	19	15	12	11	8	9	11	21
10	7	7	7	6	6	7	7	9	13	16	19	21	22	23	23	21	22	22	21	19	18	17	16	13	15	23
11	11	11	9	8	7	7	7	9	14	17	19	22	23	24	23	24	24	24	23	22	18	16	15	12	16	24
12	11	11	9	10	10	11	13	14	16	19	22	23	25	24	25	26	25	24	23	22	19	17	16	15	18	26
13	14	13	13	13	13	13	16	17	18	19	21	21	22	22	22	24	24	22	21	20	18	16	14	12	18	24
14	11	11	12	9	9	8	10	11	11	14	18	22	16	18	17	20	16	12	11	11	9	8	8	7	12	22
15	6	5	4	5	4	4	4	7	10	12	13	14	15	16	17	17	17	17	17	15	14	13	12	11	11	17
16	9	8	7	7	6	6	7	9	14	17	20	22	23	23	24	24	24	23	22	23	20	16	15	14	16	24
17	13	12	11	9	9	8	9	11	15	17	19	22	23	22	23	23	23	22	21	19	18	16	13	12	16	23
18	12	11	11	9	8	8	8	8	9	10	11	11	12	17	19	18	18	18	18	17	16	13	12	10	13	19
19	9	8	7	8	6	6	6	9	12	15	18	21	22	23	21	20	21	21	17	15	13	11	9	8	14	23
20	8	8	7	7	7	7	8	11	15	19	22	24	23	27	24	23	23	25	24	23	20	17	15	13	17	27
21	13	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	18	18	18	16	14	14	13	( )	18
22	12	11	11	11	11	10	11	13	17	20	23	24	13	16	15	14	16	18	18	17	16	14	14	13	15	24
23	12	11	11	12	11	11	12	13	16	21	23	24	24	23	18	21	23	23	19	18	17	14	13	12	17	24
24	10	9	9	9	8	8	8	11	14	18	22	24	26	22	22	26	24	24	26	23	21	18	17	16	17	26
25	14	(CA)	13	13	11	10	11	13	18	19	22	23	23	19	19	18	15	16	15	12	11	11	9	8	15	23
26	8	7	7	7	6	6	7	9	14	17	19	20	22	23	23	24	23	23	23	22	19	16	15	14	16	24
27	13	12	12	11	10	10	11	14	18	21	25	28	28	28	29	30	30	29	28	27	24	21	19	17	21	30
28	16	16	15	14	14	14	16	19	24	26	27	28	29	30	31	31	31	31	30	28	25	21	22	21	23	31
29	19	18	18	17	17	17	18	21	22	24	24	27	27	28	28	29	29	28	27	26	23	20	19	20	23	29
30	9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	9
AV	11	9	9	8	8	8	10	12	15	17	19	20	21	22	22	22	21	21	20	18	16	14	13	11	15	
PK	20	18	18	17	17	17	18	21	24	26	27	28	29	30	31	31	31	31	30	28	25	21	22	21		31
MN	2	1	1	0	-1	0	3	7	9	10	11	11	12	16	15	14	15	12	11	11	9	7	4	3		

MONTHLY MINIMUM = -1

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	11	11	10	9	8	12	14	15	16	17	17	18	18	19	17	17	16	15	14	13	12	10	9	14	19
2	9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	9	12	13	14	16	16	16	23	17	17	16	14	13	11	11	9	13	23
3	22	8	7	8	6	4	7	7	4	4	8	6	8	9	11	11	11	11	11	10	9	7	6	1	8	22
4	4	8	8	9	9	12	13	15	16	17	18	19	20	21	21	21	21	20	19	17	16	16	16	11	15	21
5	10	9	4	-2	-2	2	11	14	13	8	9	11	11	11	9	12	11	12	11	8	8	6	4	3	8	14
6	3	2	2	2	3	0	2	2	7	12	13	13	14	16	16	16	16	16	15	13	12	12	8	7	9	16
7	7	7	6	8	9	9	12	14	14	16	16	18	18	19	19	19	19	19	18	17	14	14	13	13	14	19
8	13	13	11	11	11	10	11	12	13	15	16	17	18	17	17	17	17	16	14	12	9	8	7	6	13	18
9	4	3	2	2	1	1	3	6	8	11	13	14	16	18	18	19	19	19	18	16	13	12	10	11	11	19
10	8	10	8	7	7	8	8	10	13	16	18	19	21	21	22	20	21	21	20	19	18	17	16	13	15	22
11	13	11	10	9	8	7	8	10	13	16	18	20	21	22	22	23	23	23	22	21	18	17	16	14	16	23
12	13	13	11	11	11	12	13	14	16	18	21	22	23	23	23	24	24	24	23	22	19	19	18	16	18	24
13	16	14	14	14	14	14	16	17	17	18	19	19	20	21	21	22	22	21	21	20	18	18	17	16	18	22
14	13	12	13	12	11	10	10	12	12	14	17	19	16	17	17	19	16	13	11	11	9	9	8	8	13	19
15	7	6	5	5	4	4	4	7	9	11	12	13	14	15	16	16	17	17	16	14	14	13	12	11	11	17
16	11	9	8	8	7	7	7	9	13	16	15	14	15	19	21	22	23	22	22	22	20	17	16	9	15	23
17	12	11	10	3	3	3	7	9	11	14	16	19	21	21	22	21	22	21	20	19	18	16	13	12	14	22
18	12	11	11	8	8	8	8	8	9	9	9	6	8	14	17	17	18	18	18	17	16	14	12	11	12	18
19	10	8	7	7	1	-3	1	8	11	14	17	19	21	22	20	19	19	20	16	14	13	11	10	9	12	22
20	8	6	-1	-4	5	9	8	11	14	18	21	22	22	24	23	22	22	24	23	22	20	19	18	15	16	24
21	14	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	17	18	18	16	15	14	14	( )	18
22	13	12	12	12	12	11	12	13	16	19	21	22	16	17	16	16	16	18	18	17	17	16	15	13	15	22
23	13	12	13	13	12	12	13	14	15	19	22	23	23	22	18	19	22	22	19	18	17	16	14	13	17	23
24	12	11	11	9	9	9	10	12	14	17	21	23	24	22	21	24	23	24	24	23	21	19	18	17	17	24
25	15	(CA)	13	14	12	11	12	13	17	18	20	22	22	19	19	18	14	15	14	12	11	11	11	9	15	22
26	8	9	8	8	7	7	7	10	13	16	18	18	20	21	22	22	22	22	22	21	19	17	17	17	15	22
27	15	14	14	13	12	12	12	14	18	21	23	25	26	26	27	28	28	28	27	26	24	23	22	18	21	28
28	18	18	18	17	16	16	17	20	24	25	26	26	27	28	28	29	29	29	29	28	26	24	24	23	24	29
29	22	21	20	20	19	18	19	20	22	22	23	24	25	26	26	27	27	27	27	26	23	22	22	22	23	27
30	1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	1
AV	11	10	10	9	8	8	10	12	14	15	17	18	19	19	20	20	20	20	19	18	16	15	14	12	15	
PK	22	21	20	20	19	18	19	20	24	25	26	26	27	28	28	29	29	29	29	28	26	24	24	23		29
MN	1	2	-1	-4	-2	-3	1	2	4	4	8	6	8	9	9	11	11	11	11	8	8	6	4	1		

MONTHLY MINIMUM = -4

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	12	11	11	10	9	12	13	15	16	17	17	18	18	19	17	17	16	15	14	13	12	10	8	14	19
2	10	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	9	12	13	14	16	16	16	23	17	17	15	14	13	11	11	10	13	23
3	22	9	8	8	7	7	7	8	11	13	12	11	14	16	17	17	18	18	18	17	15	13	13	11	13	22
4	11	10	9	10	10	12	13	15	17	18	18	19	21	21	22	21	21	20	19	17	16	16	16	12	16	22
5	10	9	7	7	6	7	12	14	16	17	18	19	19	19	19	19	18	19	17	12	9	6	4	3	13	19
6	3	2	1	3	3	3	6	8	10	12	12	12	14	15	16	16	16	16	15	13	12	12	9	8	10	16
7	8	8	7	8	10	11	12	14	15	16	17	18	19	19	19	20	20	19	18	17	15	14	14	14	15	20
8	13	13	12	12	12	11	11	12	13	16	17	17	18	17	17	17	17	16	15	12	9	8	6	5	13	18
9	4	3	3	2	1	1	3	6	8	12	14	14	17	18	19	19	19	18	18	15	12	11	10	11	11	19
10	8	11	9	8	7	7	9	11	14	17	18	20	20	21	22	21	21	21	20	19	18	17	15	13	15	22
11	13	11	9	9	8	7	8	10	13	16	18	21	22	22	22	23	23	23	22	21	18	17	16	13	16	23
12	13	13	12	12	12	13	14	15	17	19	22	23	23	23	24	24	24	23	23	22	19	20	18	16	19	24
13	16	15	16	15	14	14	16	16	17	19	20	20	21	21	21	22	23	21	21	20	18	18	17	16	18	23
14	13	12	14	14	11	11	11	12	12	15	18	19	16	17	17	19	16	12	11	11	9	9	8	8	13	19
15	7	6	5	5	5	5	6	7	9	12	13	14	14	16	16	16	16	17	16	14	14	13	13	11	11	17
16	11	9	8	8	8	7	8	10	13	17	19	21	22	22	23	23	23	22	22	22	20	18	17	14	16	23
17	13	12	11	11	9	8	9	12	14	16	18	21	22	22	23	22	22	21	20	19	18	17	13	13	16	23
18	12	12	11	9	8	8	7	8	9	9	10	11	11	15	18	18	18	18	18	17	15	13	12	11	12	18
19	11	9	8	9	8	7	7	8	11	14	18	19	21	22	19	19	19	20	16	14	13	11	10	10	14	22
20	9	9	8	9	9	9	9	12	14	18	21	22	22	24	23	22	23	24	23	22	20	19	18	15	17	24
21	14	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	18	18	19	16	15	14	13	( )	19
22	13	12	12	12	12	12	12	14	16	19	21	22	15	17	16	16	17	18	18	17	17	16	16	14	16	22
23	13	13	13	13	13	12	13	16	16	20	23	23	23	21	18	19	22	22	18	18	16	15	14	13	17	23
24	12	11	11	11	9	9	10	12	14	18	22	24	25	23	21	24	23	23	24	23	21	19	18	17	18	25
25	16	(CA)	14	14	13	12	13	14	17	19	21	22	22	19	19	18	14	16	14	11	11	11	11	9	15	22
26	8	9	8	8	7	7	7	10	13	17	18	19	21	22	22	23	22	23	22	22	19	17	17	17	16	23
27	16	15	14	13	13	13	13	15	18	22	24	26	26	27	27	28	28	28	27	26	24	24	22	19	21	28
28	18	19	18	18	17	18	18	21	24	26	26	27	28	28	29	29	29	29	29	28	26	25	24	23	24	29
29	22	21	21	21	21	19	19	20	22	23	24	25	26	27	27	27	28	27	27	26	24	23	23	23	23	28
30	11	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	11
AV	12	11	10	10	10	10	11	12	14	17	18	19	20	20	20	21	20	20	19	18	16	15	14	13	16	
PK	22	21	21	21	21	19	19	21	24	26	26	27	28	28	29	29	29	29	29	28	26	25	24	23		29
MN	3	2	1	2	1	1	3	6	8	9	10	11	11	15	16	16	14	12	11	11	9	6	4	3		

MONTHLY MINIMUM = 1

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	100	139	200	172	139	89	-44	-50	-72	-122	-117	-106	-156	-172	-94	-106	-139	-100	-72	-61	-44	-28	-11	-29	200
2	122	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	28	-11	-28	-111	-89	-139	-150	-122	-33	-72	-94	-61	-44	-28	-28	-11	50	-46	122
3	167	39	22	44	17	50	6	6	-6	-56	-83	-89	-178	-128	-83	-106	-83	-117	-94	-72	-78	17	100	133	-24	167
4	133	250	278	194	150	83	-11	-61	-61	-72	-94	-100	-133	-122	-122	-128	-122	-106	-56	44	172	178	139	206	27	278
5	33	33	67	83	106	122	89	-67	-83	-89	-111	-111	-117	-128	-122	-106	-72	-100	-56	-89	-72	-78	-61	-17	-39	122
6	50	50	-11	78	39	56	-11	-94	-78	-139	-183	-117	-183	-167	-194	-161	-128	-111	-78	22	194	278	178	94	-26	278
7	139	183	94	128	144	139	-11	-67	-78	-94	-106	-111	-122	-144	-156	-150	-122	-94	-67	-11	133	144	172	222	7	222
8	272	333	317	278	333	244	33	-44	-67	-67	-94	-150	-128	-106	-117	-128	-128	-111	-83	-78	-50	-39	-100	-117	9	333
9	-50	0	33	83	33	50	-56	-56	-50	-50	-78	-78	-72	-111	-56	-89	-117	-128	-83	-39	-61	-39	100	178	-31	178
10	67	233	233	150	83	-56	161	178	100	72	-11	-22	-106	-100	-94	-67	-56	-50	-67	-50	-33	-17	-78	39	21	233
11	89	-22	0	111	94	-11	89	106	-33	-33	-33	-61	-94	-89	-89	-117	-122	-106	-94	-61	-11	28	11	94	-15	111
12	206	206	222	122	150	150	144	117	89	33	-6	-6	-94	-89	-100	-100	-78	-83	-50	-22	17	217	183	22	52	222
13	117	133	183	133	128	150	17	-17	-44	-50	-72	-83	-78	-72	-72	-100	-106	-78	-56	-39	17	133	233	317	29	317
14	217	117	189	361	172	139	33	72	67	33	0	-144	-78	-78	-50	-67	-44	-17	-11	-28	-39	0	0	39	37	361
15	-22	-11	0	-61	28	56	44	6	-39	-28	-44	-22	-56	-39	-67	-72	-67	-67	-50	-56	-6	11	56	44	-19	56
16	67	56	78	150	72	67	111	61	-11	6	17	-39	-39	-44	-133	-78	-117	-106	-67	-94	-33	106	133	-22	6	150
17	-56	-56	-11	89	33	-17	6	33	-50	-33	-33	-44	-44	-83	-67	-56	-28	-61	-50	-44	44	-6	-22	0	-23	89
18	-28	-22	-56	-83	-89	-72	-83	-67	-61	-72	-67	-72	-72	-100	-61	17	-11	-6	-11	-22	-72	-39	0	72	-45	72
19	117	50	72	89	194	111	44	-22	-56	-44	-17	-56	-44	-61	-72	-89	-89	-67	-83	-72	-56	-28	-6	100	-3	194
20	67	117	122	133	183	139	106	56	-44	-44	-89	-100	-94	-161	-150	-67	-67	-67	-67	-50	-17	72	178	128	12	183
21	56	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	17	17	56	0	-17	-39	-33	( )	56
22	-6	56	94	139	94	111	128	94	-11	-44	-117	-178	89	89	72	100	78	56	33	-11	50	61	94	83	48	139
23	78	150	172	122	128	89	133	211	61	6	-6	-22	-78	-94	-44	-61	-56	-72	-83	-61	-72	33	67	100	29	211
24	106	111	89	89	39	28	122	83	0	-17	-33	6	-56	-6	-89	-122	-111	-61	-106	-61	-39	56	61	44	6	122
25	83	(CA)	111	117	161	144	122	117	-22	-22	-50	-72	-78	-44	-39	-39	-83	-28	-78	-94	-44	11	39	28	10	161
26	28	94	100	56	72	56	6	44	-6	0	-50	-33	-56	-67	-56	-78	-44	-56	-83	-11	-33	67	139	167	11	167
27	183	200	167	200	211	233	189	117	11	72	-28	-150	-139	-122	-133	-156	-161	-122	-83	-50	33	222	261	200	48	261
28	189	239	283	244	261	267	250	161	-22	-39	-56	-67	-67	-100	-94	-122	-111	-83	-89	-44	56	294	267	256	78	294
29	222	206	233	294	256	150	122	-28	-56	-44	-50	-72	-72	-94	-100	-144	-117	-139	-94	-61	22	222	233	189	45	294
30	50	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	50
AV	93	109	119	131	121	97	69	33	-22	-33	-62	-79	-87	-92	-92	-86	-84	-76	-64	-42	-2	63	79	90	6	
PK	272	333	317	361	333	267	250	211	100	72	17	6	89	89	72	100	78	56	33	56	194	294	267	317		361
MN	-56	-56	-56	-83	-89	-72	-83	-94	-83	-139	-183	-178	-183	-167	-194	-161	-161	-139	-106	-94	-78	-78	-100	-117		

MONTHLY MINIMUM = -194

TEMPERATURE @10M
DEGREE C

CB TRACT
MRI AU20
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	5	5	4	3	5	9	17	18	18	19	19	17	18	18	17	16	16	15	13	12	10	7	6	12	19
2	5	3	2	1	1	1	5	10	12	14	15	16	17	17	18	18	18	17	16	14	12	9	7	7	11	18
3	6	6	5	5	4	5	8	11	13	14	14	15	16	17	18	19	19	19	18	14	10	9	7	6	12	19
4	5	5	4	4	4	4	10	17	18	19	19	20	22	22	23	23	22	21	20	16	11	9	7	6	14	23
5	5	3	2	1	0	2	6	13	17	18	19	20	21	21	21	21	20	21	18	13	11	8	6	3	12	21
6	2	0	-1	-2	-2	-1	3	8	11	12	13	14	16	16	17	17	17	17	17	13	8	6	4	3	9	17
7	2	1	0	0	0	2	7	14	16	17	18	19	20	20	21	22	21	21	20	18	12	9	7	6	12	22
8	5	4	4	3	3	4	8	12	14	15	16	17	18	18	18	18	17	17	16	13	11	9	8	6	11	18
9	3	0	-1	-2	-3	-2	2	6	9	11	13	14	16	18	19	19	20	19	18	15	10	7	5	5	9	20
10	3	3	1	1	1	2	6	10	13	17	19	20	22	22	22	22	21	21	20	18	17	15	11	9	13	22
11	8	6	5	3	(OE)	(OE)	(OE)	13	15	18	20	21	22	23	23	23	23	22	21	16	12	9	8	7	15	23
12	6	6	5	6	7	8	8	11	16	20	23	24	24	24	25	25	24	23	22	19	15	13	11	11	16	25
13	10	8	8	8	8	10	15	18	20	21	21	22	22	22	23	24	23	22	21	17	13	10	8	7	16	24
14	6	6	5	5	4	5	7	10	14	18	20	17	18	19	20	16	14	12	12	11	9	8	7	5	11	20
15	4	3	2	2	3	4	7	10	12	13	14	16	17	17	18	18	19	17	16	15	13	10	9	7	11	19
16	6	5	4	3	3	4	7	13	17	19	20	21	22	22	23	24	24	23	23	19	15	13	16	14	15	24
17	13	11	11	9	7	7	11	14	16	18	20	21	23	23	24	24	23	22	22	19	18	15	14	13	17	24
18	12	11	11	10	9	9	10	10	11	11	12	13	16	18	19	20	20	20	19	16	13	10	7	6	13	20
19	5	5	5	5	4	4	8	12	14	17	19	20	21	21	21	21	21	18	16	15	13	10	8	8	13	21
20	6	5	5	5	4	5	9	15	19	21	22	24	24	24	24	24	24	24	23	19	16	13	11	9	16	24
21	8	8	7	7	7	8	11	16	21	22	22	19	18	(IM)	(IM)	18	19	21	20	17	16	16	15	14	15	22
22	11	10	9	8	8	(OE)	12	(IM)	20	22	22	19	17	17	17	17	18	19	18	16	14	12	12	11	15	22
23	10	10	10	9	8	8	11	16	21	22	23	24	22	21	21	21	21	20	19	16	14	12	10	9	16	24
24	8	7	6	5	5	6	10	14	18	20	23	25	25	23	25	25	25	26	23	20	16	14	12	11	16	26
25	9	9	8	7	7	7	10	16	18	21	22	22	20	19	19	15	16	16	13	13	11	9	7	6	13	22
26	5	4	4	3	2	3	7	13	16	18	20	20	21	22	23	22	23	23	22	20	15	13	12	10	14	23
27	9	8	7	7	6	6	11	16	20	24	25	26	27	28	28	28	29	28	28	23	20	16	13	11	19	29
28	11	11	11	11	9	10	15	17	23	27	28	28	29	30	30	30	31	30	30	24	19	15	14	13	21	31
29	11	10	9	7	7	10	15	22	24	24	26	26	27	27	28	28	28	28	27	23	20	16	15	15	20	28
30	14	14	15	15	15	15	16	21	21	20	22	24	25	26	27	26	22	21	20	14	13	(IM)	(IM)	(IM)	19	27
AV	7	6	6	5	5	5	9	14	17	18	20	20	21	21	22	22	21	21	20	17	14	11	10	8	14	
PK	14	14	15	15	15	15	16	22	24	27	28	28	29	30	30	30	31	30	30	24	20	16	16	15		31
MN	2	0	-1	-2	-3	-2	2	6	9	11	12	13	16	16	17	15	14	12	12	11	8	6	4	3		

MONTHLY MINIMUM = -3

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	41	31	36	34	43	43	28	24	18	16	12	12	10	9	8	8	9	15	18	20	23	26	32	46	23	46
2	73	54	58	64	68	74	72	56	45	36	28	24	18	18	17	16	15	15	17	20	25	30	42	46	39	74
3	16	50	58	61	71	74	74	61	44	54	80	43	33	28	19	15	15	12	12	13	26	35	35	35	40	80
4	35	39	40	38	32	26	22	18	15	13	12	11	9	8	7	7	6	6	7	10	12	12	15	20	18	40
5	31	42	48	51	54	40	23	16	14	11	9	9	7	7	7	8	8	7	8	30	43	53	57	65	27	65
6	72	74	68	68	56	40	30	25	22	20	19	17	15	14	13	12	9	8	8	11	18	21	21	21	28	74
7	23	25	26	26	23	23	21	16	15	10	10	9	8	7	7	6	6	6	6	5	6	7	7	9	13	26
8	13	17	18	18	20	21	22	20	20	21	20	18	17	17	18	17	16	15	14	18	21	22	35	52	20	52
9	60	74	81	86	90	90	82	63	44	33	24	21	18	16	12	8	7	12	16	25	30	34	33	34	41	90
10	52	33	33	32	32	35	34	21	17	15	13	13	11	11	11	11	11	12	14	16	19	25	33	37	23	52
11	41	48	53	56	60	62	51	37	30	24	20	18	14	11	9	8	8	7	7	11	16	17	19	22	27	62
12	25	26	26	28	28	32	36	36	27	20	13	10	10	10	10	10	10	14	18	22	23	23	23	22	21	36
13	22	23	23	28	21	19	20	19	14	13	13	9	9	9	9	9	9	11	14	23	27	27	28	29	18	29
14	28	26	29	30	35	37	42	44	( )	44	40	33	26	35	31	29	27	40	68	85	91	93	93	94	48	94
15	94	95	95	96	97	97	97	97	84	78	69	63	51	49	43	39	36	36	34	39	50	55	63	68	68	97
16	76	81	85	86	89	91	91	91	70	49	35	25	17	15	15	14	13	12	12	12	15	23	34	36	45	91
17	52	59	68	77	85	89	89	84	67	56	44	38	28	22	21	19	19	17	17	18	27	42	44	62	48	89
18	63	66	74	84	84	89	91	91	85	80	77	74	73	66	50	39	35	30	27	24	23	24	30	42	59	91
19	46	49	50	56	60	67	68	68	54	43	39	29	19	14	9	9	19	20	18	40	43	54	62	68	42	68
20	49	75	79	81	81	79	78	76	63	48	31	22	16	12	10	10	10	12	11	11	11	14	25	31	39	81
21	35	35	40	45	48	53	57	57	56	48	36	27	23	23	32	40	77	68	55	61	52	54	59	61	48	77
22	64	72	77	80	82	82	83	83	80	60	41	29	27	73	83	61	68	58	49	56	53	66	68	69	65	83
23	70	70	73	73	73	73	73	73	67	48	30	26	23	22	19	31	24	24	28	35	36	43	54	65	48	73
24	75	81	81	82	85	85	89	89	70	55	33	28	20	17	22	22	17	17	17	16	19	28	38	45	47	89
25	47	50	51	51	57	66	66	70	58	40	36	32	30	27	39	43	37	52	50	56	89	89	88	91	55	91
26	92	97	97	97	97	97	96	85	63	48	35	35	31	23	22	21	20	19	19	19	23	30	42	46	52	97
27	52	56	63	66	68	69	69	69	53	44	32	21	18	16	16	15	15	13	13	11	11	15	22	25	36	69
28	27	27	28	28	29	31	34	37	39	19	17	13	12	11	10	10	8	8	8	8	8	8	16	15	19	39
29	14	12	12	13	16	18	19	20	20	18	16	14	12	11	10	9	9	8	8	8	8	9	16	17	13	20
30	31	17	17	18	22	23	23	27	30	33	35	36	33	28	24	21	19	18	31	52	95	95	90	84	38	95
AV	47	50	53	55	57	58	56	52	44	37	31	25	21	21	20	19	19	20	21	26	31	36	41	45	37	
PK	94	97	97	97	97	97	97	97	85	80	80	74	73	73	83	61	77	68	68	85	95	95	93	94		97
MN	13	12	12	13	16	18	19	16	14	10	9	9	7	7	7	6	6	6	6	5	6	7	7	9		

MONTHLY MINIMUM = 5

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	0	0	0	0	0	3	13	37	46	46	50	79	72	58	23	40	41	24	4	1	0	0	0	0	538	79
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	36	52	50	49	52	45	35	25	25	22	9	4	1	0	0	0	0	416	52
3	0	0	0	0	0	2	12	32	43	43	53	82	55	49	53	49	38	26	11	1	0	0	0	0	551	82
4	0	0	0	0	0	4	13	37	52	65	75	82	82	67	69	57	42	25	8	0	0	0	0	0	679	82
5	0	0	0	0	0	4	13	37	53	66	76	81	82	76	59	41	19	26	7	1	0	0	0	0	640	82
6	0	0	0	0	0	4	13	38	52	56	56	45	81	76	72	59	43	26	10	1	0	0	0	0	632	81
7	0	0	0	0	0	4	13	37	53	66	75	80	81	78	69	58	43	26	11	1	0	0	0	0	695	81
8	0	0	0	0	0	4	13	37	52	65	72	59	67	39	33	48	37	23	10	1	0	0	0	0	560	72
9	0	0	0	0	0	4	13	38	53	66	71	64	82	77	68	56	42	26	11	1	0	0	0	0	671	82
10	0	0	0	0	0	4	13	34	44	52	67	52	58	46	32	31	23	14	5	0	0	0	0	0	475	67
11	0	0	0	0	0	4	13	36	51	64	73	79	75	58	68	58	43	26	11	1	0	0	0	0	659	79
12	0	0	0	0	0	4	12	23	46	38	51	53	44	44	44	31	22	16	8	0	0	0	0	0	437	53
13	0	0	0	0	0	4	13	25	44	41	40	47	46	31	59	48	22	13	5	0	0	0	0	0	438	59
14	0	0	0	0	0	6	7	10	38	54	56	17	27	17	43	8	3	7	5	1	0	0	0	0	299	56
15	0	0	0	0	0	2	15	35	50	40	48	32	42	36	23	21	15	13	8	2	0	0	0	0	382	50
16	0	0	0	0	1	5	13	37	50	64	74	78	64	68	60	46	21	15	13	1	0	0	0	0	608	78
17	0	0	0	0	0	5	13	35	50	63	73	80	49	44	37	34	13	7	6	1	0	0	0	0	508	80
18	0	0	0	0	0	2	8	13	13	17	19	24	58	64	32	26	26	22	12	1	0	0	0	0	339	64
19	0	0	0	0	0	4	13	36	50	63	73	79	71	29	29	38	29	13	9	1	0	0	0	0	536	79
20	0	0	0	0	0	4	12	31	50	64	65	58	83	32	26	35	44	27	11	1	0	0	0	0	542	83
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	11	7	1	0	0	0	0	31	13
22	0	0	0	0	1	6	13	25	47	59	61	7	8	3	3	7	14	13	4	1	0	0	0	0	272	61
23	0	0	0	0	0	4	11	34	49	58	66	46	44	29	33	43	36	21	7	1	0	0	0	0	484	66
24	0	0	0	0	1	4	12	35	49	62	72	79	47	33	65	25	35	22	7	1	0	0	0	0	548	79
25	0	0	0	0	1	3	13	33	47	63	71	50	20	6	16	14	38	9	1	1	0	0	0	0	386	71
26	0	0	0	0	1	4	11	35	50	61	64	80	80	65	63	40	39	28	11	1	0	0	0	0	635	80
27	0	0	0	0	1	4	11	36	50	63	71	74	73	75	70	56	43	27	11	1	0	0	0	0	668	75
28	0	0	0	0	1	4	11	37	51	64	74	79	80	76	70	58	43	27	11	1	0	0	0	0	688	80
29	0	0	0	0	1	5	15	35	54	64	73	69	79	77	70	58	42	26	10	2	0	0	0	0	681	79
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	( )
TL	0	0	0	0	5	106	344	915	1340	1577	1768	1709	1694	1391	1316	1111	888	570	239	24	0	0	0	0	14998	
PK	0	0	0	0	1	6	15	38	54	66	76	82	83	78	72	59	44	28	13	2	0	0	0	0		83

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	775	775	774	774	774	774	774	774	774	774	773	773	773	773	774	773	770	770	771	771	772	773	773	773	773	775
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	776	777	777	778	778	778	778	777	783	775	771	771	771	772	773	773	774	774	775	783
3	775	773	773	774	775	774	778	778	779	779	779	779	778	778	780	794	786	786	786	786	787	787	787	787	781	794
4	787	787	787	787	787	787	786	786	785	785	785	784	783	783	782	782	782	782	782	782	782	782	783	783	784	787
5	784	784	783	784	783	783	783	784	782	781	781	780	779	779	778	778	778	778	779	782	783	785	786	786	782	786
6	787	788	787	788	789	788	789	789	788	788	788	787	787	787	787	787	787	787	788	787	788	788	788	789	788	789
7	789	788	788	788	788	788	789	788	787	791	791	791	791	791	790	790	789	789	789	790	790	790	790	790	789	791
8	790	790	790	790	790	790	790	791	791	792	791	791	791	791	791	792	792	792	792	793	794	795	796	796	792	796
9	796	796	796	796	795	796	796	795	795	795	795	796	795	795	795	794	789	789	789	789	790	790	790	790	793	796
10	790	790	790	790	791	791	793	796	795	794	794	794	793	793	792	792	792	792	792	792	793	793	793	793	792	796
11	793	793	793	793	793	793	793	793	793	793	793	793	792	792	792	791	791	791	791	791	792	792	792	792	792	793
12	791	791	791	791	791	791	792	792	792	792	792	792	792	791	791	790	790	790	790	790	790	791	790	790	791	792
13	790	790	790	790	790	791	791	791	791	791	791	791	791	790	790	790	789	789	789	789	789	789	789	789	790	791
14	788	788	788	788	788	789	789	789	789	789	789	789	789	788	788	788	789	790	790	791	792	791	791	791	789	792
15	791	791	791	791	792	792	792	793	793	793	793	793	793	792	792	792	792	792	793	793	793	794	794	794	792	794
16	794	793	793	794	794	794	794	794	794	794	794	794	793	793	792	792	791	791	791	791	792	792	793	793	793	794
17	793	793	792	792	792	792	793	794	794	794	793	793	792	791	790	790	790	790	790	790	791	792	792	792	792	794
18	792	792	792	792	793	793	793	794	794	793	794	794	793	793	792	792	792	792	792	793	793	794	794	794	793	794
19	794	794	794	794	794	794	795	795	795	795	794	794	794	794	794	793	793	794	794	794	795	795	795	795	794	795
20	794	794	794	794	794	795	795	795	795	794	794	794	794	793	793	792	792	792	792	792	792	793	793	793	793	795
21	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	794	793	793	794	794	794	795	795	( )	795
22	794	794	794	794	795	795	795	795	795	795	794	795	794	794	794	794	794	794	795	795	795	796	795	795	795	796
23	795	795	795	795	795	795	795	796	795	795	795	795	795	795	795	794	794	794	795	795	796	795	795	795	795	796
24	795	795	795	795	795	795	795	795	795	795	795	794	794	794	794	793	793	792	792	793	793	794	793	793	794	795
25	(CA)	793	792	792	792	793	793	793	793	793	793	793	792	792	792	794	794	795	796	795	795	795	795	795	793	796
26	795	795	795	795	795	795	795	796	796	796	796	796	795	795	795	795	794	794	794	795	795	795	795	795	795	796
27	795	795	794	795	795	795	795	795	795	795	795	795	794	794	793	793	793	792	792	792	792	793	792	792	794	795
28	792	792	792	792	792	792	792	792	792	792	792	792	792	791	791	791	790	790	790	790	790	791	791	791	791	792
29	791	791	791	791	791	792	792	792	793	793	792	792	792	792	791	791	791	790	791	791	791	791	791	791	791	793
30	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
AV	790	790	790	790	790	791	790	791	791	791	791	790	790	790	790	790	789	789	789	790	790	790	791	791	790	
PK	796	796	796	796	795	796	796	796	796	796	796	796	795	795	795	795	794	795	796	795	796	796	796	796		796
MN	775	773	773	774	774	774	774	774	774	774	773	773	773	773	774	773	770	770	771	771	772	773	773	773		

MONTHLY MINIMUM = 770

(09/24/82-RPI)'

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1																									( )	
2																									( )	
3																									( )	
4																									( )	
5																									( )	
6																									( )	
7					(TR)	(TR)																			( )	
8																									( )	
9																							(TR)	(TR)	( )	
10																									( )	
11					(TR)	(TR)	(TR)																	(TR)	( )	
12	(TR)																								( )	
13																									( )	
14					58																				58	58
15																									( )	
16																									( )	
17																									( )	
18																									( )	
19																				3					3	3
20																									( )	
21	(TR)	(TR)	(TR)													13									13	13
22												41													41	41
23																									( )	
24																				(TR)	(TR)				( )	
25															(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	
26	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	( )
27	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	( )
28	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)																		( )	
29																									( )	
30																				20				10	30	20
TL	( )	( )	( )	( )	58	( )	( )	( )	( )	( )	( )	41	( )	( )	( )	13	( )	( )	( )	23	( )	( )	( )	10	( )	
PK					58							41				13				20				10		58

PRECIPITATION
CM*100

CB TRACT
MRI AD20
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																									
2																									
3																									
4																									
5																									
6																									
7									3										(TR)	(TR)					3
8																									
9																									
10																									
11																									
12																									
13																									
14																				18	3	3		(TR)	23
15																									
16																									
17																									
18																									
19																									
20																									
21													3		8	18	8	3							38
22																									
23																									
24																									
25														3						5					8
26																									
27																								(TR)	
28							(TR)	(TR)										(TR)	(TR)						
29																									
30																			10	13			8		30
TL									3				3	3	8	18	8	3	10	36	3	3	8		102

PRECIPITATION
CM*100

CB TRACT
MRI AD28
JUNE 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																									
2																						(TR)	(TR)		
3																						(TR)			
4																									
5	(TR)																					(TR)			
6																					(TR)				
7						(TR)	(TR)																		
8																									
9																									
10																									
11																									
12																									
13																									
14							(TR)									84									84
15																									
16																									
17				(TR)		3																(TR)	(TR)		3
18																									
19																						(TR)	(TR)		
20																									
21												13	5							(TR)	(TR)				18
22										10															10
23																			(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	
24																									
25											8						5								13
26																					(TR)	(TR)			
27																				(TR)	(TR)	(TR)	(TR)		
28																					(TR)	(TR)	(TR)	(TR)	
29																									
30																				23			5	8	36
TL						3				10	8	13	5			84	5			23			5	8	163

```
STABILITY CLASS USING DT/DZ                                                          CB-TRACT
DT 60-10M                                                                            TRAILER AA23
WS 10M                                                                               JUNE  1982
                                                                                     OCCIDENTAL OIL SHALE, INC.

                                             HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  AVE


  1    F  (  )   F    F    F    D    D    D    D    C    C    D    D    C    C    D    D    B    D    D    D    D    E    E    D
  2  (  ) (  ) (  ) (  ) (  ) (  )   E    E    D    A    B    B    B    B    D    D    B    D    D    D    D    E    E    E    D
  3    E    E    E    E    E    E    E    E    D    C    B    A    A    C    B    C    B    B    D    C    E    F    F    E    D
  4    F    F    F    F    F    D    D    D    D    D    D    C    D    D    D    D    D    D    D    E    F    E    E    F    E
  5    E    E    E    F    F    F    F    D    D    D    D    D    D    D    D    D    D    D    D    C    D    C    D    E    D
  6    E    E    E    F    E    E    E    B    C    B    B    B    B    B    B    C    D    D    C    E    F    F    F    F    D
  7  (  )   F    F    F    E    F    E    D    D    D    D    D    C    D    D    D    D    D    D    E    E    E    E    E    E
  8    E    E    F    E    E    F    E    D    D    D    B    B    B    B    B    D    C    C    C    C    D    D    B    B    D
  9  (  )   E    E    F    E    E    D    D    D    D    C    C    D    A    D    B    B    B    C    D    D    D    F    F    D
 10    F    F    F    F    D    F    F    F    E    E    E    A    A    B    D    D    D    D    D    D    E    C    E    F    E
 11    E    E    F    F    E    F    F    D    D    D    D    B    B    B    B    B    B    B    D    E    E    E  (  )   F    D
 12    F    F    F    F    F    F    F    F    E    E    E    B    B    B    B    C    C    D    E    E    F    F    E    F    E
 13    F    F    F    F    F    E    E    D    D    D    C    C    D    D    B    C    C    D    D    E    F    F    F    F    E
 14    F    E    F    F    F    E  (  )   E    E    E    A    C    C    D    D    D    D    E    D    D    E    E    E    E    E
 15    E    E    D    E    E    E    E    D    D    D    E    D    D    D    D    D    D    D    D    E    E    E    E    E    E
 16    E  (  )   F    E  (  ) (  )   E    E    E    E    D    D    D    A    C    A    A    D    B    D    F    F    E    D    D
 17    D    E    F    E    E    E    E    D    D    D    D    D    C    D    D    D    D    D    D    E    E    E    E    D    D
 18    E    D    C    B    D    C    D    D    D    D    D    D    A    D    E    E    E    E    E    D    D    E    E    F    D
 19    E    E    F    F    F    E    E    D    D    E    D    D    D    D    B    B    D    D    D    D    D    E    F    E    D
 20    F    F    F    F    F    F    E    D    D    B    A    B    A    A    D    D    D    D    D    E    E    F    F    E    D
 21  (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   E    E    E    E    E    D    D    E  (  )
 22    E    F    F    F    F    F    F    E    D    A    B    F    F    E    F    E    E    E    E    E    E    F    F    F    E
 23    F    F    F    F    F    F    F    E    E    E    E    C    B    D    D    D    D    C    D    D    E    E    F    F    E
 24    F    F    F    E    E    F    F    E    E    D    E    D    E    C    B    B    D    B    D    D    E    E    E    F    E
 25  (  )   F    F    F    F    F    F    E    E    D    D    C    D    D    D    C    D    C    B    D    E    E    E    E    E
 26    F    F    E    E    E    E    E    E    E    D    D    D    D    D    C    D    D    C    E    D    E    F    F  (  )   E
 27    F    F    F    F    F  (  )   F    E    E    D    A    A    A    A    B    B    B    C    D    E    E    F    F    F    D
 28    F    F    F    F    F    F    F    E    D    D    D    D    C    C    C    C    C    B    D    E    E    E    E    D    E
 29    E    E    E    E    F    E    D    D    D    D    D    D    C    D    C    C    B    B    D    E    E    E    E    E    D
 30  (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  ) (  )   F  (  )

AVE    E    E    F    F    E    E    E    D    D    D    C    C    C    C    C    C    C    C    D    D    E    E    E    E    D


   TOTAL OCCURRENCES:  A= 19     B= 58     C= 52     D=207     E=188     F=140     HOURS MISSING= 56



   (08/20/82-RPI)
```

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO)

CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	3	2	2	7	2	3	6	3	3	2	4	4	7	17	35	12	3	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0 :	3
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0 :	5
5. - 10. :	0	0	0	1	0	0	1	0	0	0	0	0	1	3	14	1	0 :	21
LT 5. :	20	15	15	9	25	22	32	37	61	105	81	34	27	40	56	43	10 :	632
TOTAL :	20	15	15	10	25	22	33	37	61	105	81	34	28	48	74	45	10	663
MEAN CONC.	1	1	1	2	1	1	1	1	1	1	1	1	1	4	4	2	1	2

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

ONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	11	5	11	22	9	11	15	16	15	7	16	15	20	50	103	30	11	
GT 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
60. - 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
55. - 60.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50. - 55.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
45. - 50.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
40. - 45.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. - 40.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
30. - 35.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	1	0	7
25. - 30.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	4
20. - 25.	0	0	0	1	0	0	0	0	0	0	0	0	1	1	6	0	0	9
15. - 20.	0	0	0	0	0	0	1	1	1	0	1	1	1	4	9	2	0	21
10. - 15.	1	0	1	1	0	1	2	0	0	0	0	0	3	4	9	3	1	26
5. - 10.	6	1	2	2	2	0	5	4	2	9	11	4	4	19	29	23	2	125
LT 5.	13	14	12	6	23	21	25	32	58	96	69	29	19	14	12	15	7	465
TOTAL	20	15	15	10	25	22	33	37	61	105	81	34	28	48	74	45	10	663
MEAN CONC.	4	2	3	6	2	2	3	3	2	2	2	2	5	11	14	7	4	5

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	5	3	7	11	5	5	7	11	9	7	9	7	9	24	48	13	5	
GT 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60. - 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55. - 60.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50. - 55.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45. - 50.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
40. - 45.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. - 40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30. - 35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
25. - 30.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
20. - 25.	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
15. - 20.	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	8
10. - 15.	0	0	0	1	0	0	0	1	0	0	0	0	0	1	8	2	0	13
5. - 10.	1	0	1	1	1	1	5	2	1	2	5	2	5	9	18	8	1	63
LT 5.	19	15	14	8	24	21	28	34	60	103	76	32	23	32	41	35	9	574
TOTAL	20	15	15	10	25	22	33	37	61	105	81	34	28	48	76	45	10	665
MEAN CONC.	1	0	1	2	0	0	1	1	0	0	0	0	2	5	7	3	1	2

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	98	98	90	99	90	92	94	84	129	129	119	127	111	105	123	96	86	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	2	3	0	1	0	0	1	0	0 :	7
110. - 120. :	0	0	0	0	0	0	0	0	1	4	11	3	1	0	0	0	0 :	20
100. - 110. :	0	0	0	0	0	0	0	0	5	14	6	6	2	5	1	0	0 :	39
90. - 100. :	4	5	1	2	1	2	2	0	9	13	13	2	7	14	16	4	0 :	95
80. - 90. :	11	1	0	2	6	2	5	2	16	34	14	8	6	9	22	25	1 :	164
70. - 80. :	3	6	4	2	7	4	5	10	13	13	10	4	5	9	22	11	1 :	129
60. - 70. :	1	0	5	4	8	13	14	19	12	16	14	7	2	3	6	5	3 :	132
50. - 60. :	1	3	3	0	3	1	7	6	2	5	9	2	4	5	7	1	1 :	60
40. - 50. :	0	0	2	0	0	0	0	0	1	2	4	0	2	4	1	0	3 :	19
30. - 40. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1 :	2
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	20	15	15	10	25	22	33	37	61	105	81	33	29	49	76	46	10	667
MEAN CONC.	83	78	65	77	71	70	68	66	82	83	81	85	79	79	80	79	58	78

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	229	114	229	114	114	114	114	114	114	114	114	114	114	114	114	114	0	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	2
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	3	3	2	1	4	3	3	4	19	15	15	10	7	5	8	12	0 :	114
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	16	12	12	9	19	16	28	31	38	88	66	25	22	43	66	34	10 :	535
TOTAL :	20	15	15	10	23	19	31	35	57	103	81	35	29	48	74	46	10	651
MEAN CONC.	28	22	30	11	19	18	11	13	38	16	21	32	27	11	12	29	0	20

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	7	7	5	7	7	7	128	7	7	7	7	7	7	7	20	7	5	
GT 13. :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0 :	3
12. - 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0 :	4
9. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8. :	4	1	0	2	1	1	0	2	3	11	6	1	1	3	7	6	0 :	49
6. - 7. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6. :	2	3	7	1	10	9	10	14	11	15	14	4	10	4	9	9	2 :	134
4. - 5. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	2	0	1	1	0	1	0	5	3	12	2	4	2	12	12	5	0 :	62
1. - 2. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1. :	12	11	7	6	13	11	22	16	44	67	59	25	15	30	35	25	8 :	406
TOTAL :	20	15	15	10	24	22	33	37	61	105	81	34	28	49	69	45	10	658
MEAN CONC.	2	1	2	2	2	2	5	2	1	1	1	1	2	1	3	2	1	2

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(6/01/82 TO 6/30/82)

CONCENTRATION UG/M**3		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		4	4	2	4	2	2	1	2	4	2	4	4	4	4	5	4	1	
GT 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
12. - 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
9. - 10.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
6. - 7.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
4. - 5.	:	3	1	0	2	0	0	0	0	1	0	1	1	2	2	5	3	0 :	21
3. - 4.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3.	:	2	1	1	0	3	1	0	1	0	7	1	2	0	2	10	7	0 :	38
1. - 2.	:	3	5	2	2	4	2	5	6	9	16	18	4	6	2	11	9	1 :	105
LT 1.	:	12	8	12	6	17	19	28	30	51	82	61	27	20	43	39	26	9 :	490
TOTAL	:	20	15	15	10	24	22	33	37	61	105	81	34	28	49	66	45	10	655
MEAN CONC.		1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0

0 = NO OBSERVATIONS

(09/16/82-RPI)

```
                         FREQUENCY TABLE OF WIND SPEED BY DIRECTION

     10 METER LEVEL                                                              CATHEDRAL BLUFFS SHALE OIL

                          STATION AA23   PERIOD( 6/01/82 TO  6/30/82)

                                                WIND DIRECTION
               N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  VAR  TOTAL
WIND SPEED
   MAX         4    4    4    5    4    3    4    5    8   10    9    9    7    7    6    5    0
METERS/SEC
          ......................................................................................

  GT   11. :   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :    0

 8. -  11. :   0    0    0    0    0    0    0    0    2    5    3    2    0    0    0    0    0 :   12

 5. -   8. :   0    0    0    1    0    0    0    1   16   27   15    4    2    4    5    2    0 :   77

 3. -   5. :   3    5    1    0    1    1    2   10   18   29   14    7    1   14   14   11    0 :  131

 1. -   3. :   7    6    6    4   11   13   18   18   13   32   29   16   16   22   49   26    0 :  286

  LT    1. :  10    4    8    5   13    8   14   10   12   12   20    6   11    9    8    7    0 :  157

  TOTAL    :  20   15   15   10   25   22   34   39   61  105   81   35   30   49   76   46    0    663
          ......................................................................................

  PERCENT      3.   2.   2.   2.   4.   3.   5.   6.   9.  16.  12.   5.   5.   7.  11.   7.   0.  100.

          0 = NO OBSERVATIONS
```

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(6/01/82 TO 6/30/82)

WIND SPEED METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX		6	6	4	7	5	4	7	8	11	13	13	12	10	8	9	8	0	
GT	11. :	0	0	0	0	0	0	0	0	1	4	4	2	0	0	0	0	0 :	11
8. -	11. :	0	0	0	0	0	0	0	1	11	15	11	3	1	1	5	1	0 :	49
5. -	8. :	1	3	0	1	1	0	3	6	17	36	16	5	2	8	7	2	0 :	108
3. -	5. :	4	5	4	1	3	12	8	10	13	16	15	9	5	19	29	20	0 :	173
1. -	3. :	5	4	4	2	7	12	16	11	15	11	17	11	21	21	28	18	0 :	203
LT	1. :	13	4	3	5	8	6	13	8	8	7	8	7	4	11	8	6	0 :	119
TOTAL	:	23	16	11	9	19	30	40	36	65	89	71	37	33	60	77	47	0	663
PERCENT		3.	2.	2.	1.	3.	5.	6.	5.	10.	13.	11.	6.	5.	9.	12.	7.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(6/01/82 TO 6/30/82)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	5	7	6	8	6	4	9	9	12	15	15	13	11	10	8	8	0	
GT 11. :	0	0	0	0	0	0	0	0	3	4	6	4	1	0	0	0	0 :	18
8. - 11. :	0	0	0	1	0	0	3	3	17	29	20	3	1	3	5	2	0 :	87
5. - 8. :	1	5	1	1	1	0	4	3	17	25	16	3	2	8	11	4	0 :	102
3. - 5. :	9	3	4	0	4	8	15	8	6	9	11	17	11	18	35	20	0 :	178
1. - 3. :	8	4	6	4	7	15	17	10	16	18	11	14	14	22	28	23	0 :	217
LT 1. :	6	3	1	3	5	7	3	5	10	4	4	6	4	3	2	2	0 :	68
TOTAL :	24	15	12	9	17	30	42	29	69	89	68	47	33	54	81	51	0	670
PERCENT	4.	2.	2.	1.	3.	4.	6.	4.	10.	13.	10.	7.	5.	8.	12.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL CATHEDRAL BLUFFS SHALE OIL

STATION AD20 PERIOD(6/01/82 TO 6/30/82)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	3	3	2	4	4	4	5	6	7	6	7	7	8	6	5	4	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0 :	2
5. - 8. :	0	0	0	0	0	0	2	9	10	7	7	1	3	8	1	0	0 :	48
3. - 5. :	3	1	0	3	11	44	13	12	17	6	9	7	37	26	9	4	0 :	202
1. - 3. :	12	7	10	19	134	96	11	9	9	7	5	17	51	29	12	5	0 :	433
LT 1. :	0	1	2	3	8	5	4	0	0	1	0	0	0	0	0	0	0 :	24
TOTAL :	15	9	12	25	153	145	30	30	36	21	21	25	93	63	22	9	0	709
PERCENT	2.	1.	2.	4.	22.	20.	4.	4.	5.	3.	3.	4.	13.	9.	3.	1.	0.	100.

0 = NO OBSERVATIONS

```
FIVE MAXIMUM SLIDING AVERAGE                                         C-B TRACT
UG/M**3                                                              SITE AB23
                                                                     JUNE 1982
                                                                     CATHEDRAL BLUFFS SHALE OIL CO.

     COMPONENT      AVG. TIME      RANK      DAY      HOUR(BEG)      VALUE

       SO2             3 HR
                                     1        17          5           42.8
                                     2        11         18           13.1
                                     3        25         11           10.5
                                     4        24          9            7.9
                                     5        24         12            7.9

       SO2            24 HR
                                     1        24         14            6.4
                                     2        28         10            6.3
                                     3        26         24            6.2
                                     4        23         14            6.0
                                     5        16         17            5.8

       CO              1 HR
                                     1        26          7          200.0
                                     2        26          8          200.0
                                     3         3         15          100.0
                                     4         4          5          100.0
                                     5         4          6          100.0

       CO              8 HR
                                     1        26          2          100.0
                                     2        28          2          100.0
                                     3        29          7          100.0
                                     4        10          1          100.0
                                     5        10         13          100.0

       O3              1 HR
                                     1         5         12          129.5
                                     2         5         13          129.5
                                     3         5         19          127.5
                                     4         9          8          123.6
                                     5         5         14          121.6

       PART           24 HR
                                     1         8          1           51.4
                                     2        28          1           47.7
                                     3        12          1           45.1
                                     4        24          1           41.8
                                     5        20          1           36.2
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

JUNE 1982

GASEOUS PARAMETERS	
NOX:	94 %
NO:	94
NO2:	94
O3:	94
CO:	91
SO2:	94
H2S:	94

PARTICULATES: 100 %

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	94 %
30 M:	94
60 M:	94
WIND DIRECTION	
10 M:	94
30 M:	94
60 M:	94
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	94
30 M:	94
60 M:	94
TEMPERATURE	
10 M:	94
30 M:	94
60 M:	94
DELTA TEMPERATURE:	94
RELATIVE HUMIDITY:	100
SOLAR RADIATION:	94
BAROMETRIC PRESSURE:	94
PRECIPITATION:	91

JULY

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-303
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-304
Nitrogen Dioxide (NO_2) at Station AB23 . . . . II-305
Ozone (O_3) at Station AB23 . . . . II-306
Carbon Monoxide (CO) at Station AB23 . . . . II-307
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-308
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-309
Particulates Daily Average at Stations AB23, AB26 . . . . II-310

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-311
Wind Speed at Station AA23 - 30 Meter Level II-312
Wind Speed at Station AA23 - 60 Meter Level II-313
Wind Speed at Station AD20 . . . . II-314
Wind Direction at Station AA23 - 10 Meter Level II-315
Wind Direction at Station AA23 - 30 Meter Level II-316
Wind Direction at Station AA23 - 60 Meter Level II-317
Wind Direction at Station AD20 . . . . II-318
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-319
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-320
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-321
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-322
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level . . . . II 323
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-324
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-325
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-326
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-327
Ambient Air Temperature at Station AD20 . . . . II-328
Delta Temperature (60m - 10m) at Station AA23 . . . . II-329
Relative Humidity at Station AB23 - 3 Meter Level II-330
Solar Radiation at Station AB23 . . . . II-331
Barometric Pressure at Station AB23 . . . . II-332
Precipitation at Station AB23 . . . . II-333
Precipitation at Station AD20 . . . . II-334
Precipitation at Station AD28 . . . . II-335
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-336

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-337
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-338
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-339
Ozone (O_3) at Station AB23. . . . . II-340
Carbon Monoxide (CO) at Station AB23. . . . . II-341
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-342
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-343

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-344
Station AA23 - 30 Meter Level II-345
Station AA23 - 60 Meter Level II-346
Station AD20. . . . . II-347

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-348

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-349

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	2	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	2	2	4
2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	2	1	2
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	2
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	(PF)	(PF)	(PF)	(PF)	1	1
6	1	2	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	2	2
7	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	2
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
9	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
11	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	2	1	2
13	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	2
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
16	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2
18	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	1	2
20	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
21	1	1	1	2	1	1	1	0	1	1	1	1	1	1	(CA)	1	1	1	1	1	1	1	1	2	1	2
22	1	1	1	1	1	1	1	1	(CA)	(CA)	(CA)	(CA)	(CA)	2	1	2	2	1	1	1	2	1	2	4	2	4
23	1	2	2	1	2	1	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	2	2
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	2
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
27	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
28	1	(PF)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
31	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1	2
AV	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
PK	1	2	2	2	2	2	4	2	2	2	1	2	2	2	2	2	2	2	2	1	2	2	2	4		4

(10/05/82-RPI)

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	6	6	6	4	4	4	6	6	4	2	4	4	4	4	2	2	2	4	9
2	4	4	4	4	4	2	4	4	4	4	2	4	2	4	2	2	2	2	2	2	2	2	2	2	3	4
3	0	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	(PF)	(PF)	(PF)	(PF)	2	4
6	4	2	2	2	2	2	2	4	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	4
7	4	4	4	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	4
8	2	2	2	2	2	4	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
9	2	2	2	2	2	2	2	2	4	2	2	2	0	2	2	2	2	2	0	2	2	2	0	2	2	4
10	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	0	2	0	0	2	2
11	0	0	2	2	2	2	0	2	2	2	2	2	0	2	0	2	2	2	2	2	0	0	0	2	1	2
12	2	2	2	2	0	0	2	2	2	4	2	2	2	0	2	0	0	2	0	0	0	2	2	2	1	4
13	2	0	0	0	2	0	2	2	0	2	2	2	0	2	2	2	2	2	2	2	0	2	0	2	1	2
14	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	0	0	0	2	2	4
15	2	0	0	0	2	0	2	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16	0	0	0	0	2	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17	2	2	2	2	4	2	4	2	4	2	2	2	2	2	2	0	2	0	0	0	2	0	2	0	2	4
18	2	2	2	2	2	0	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	0	2	2	2
19	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	2	2	2	2	2	2
20	2	2	2	0	2	2	6	2	2	2	4	2	2	2	2	2	2	2	2	2	2	0	2	2	2	6
21	2	2	2	2	2	2	2	4	2	2	2	2	0	0	(CA)	0	0	0	2	2	0	2	2	2	1	4
22	2	2	2	0	2	2	2	4	(CA)	(CA)	(CA)	(CA)	(CA)	6	4	6	6	6	6	6	6	6	6	6	4	6
23	6	6	6	6	6	6	6	6	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	6
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	2	2	2	2	4	4	4	6	6	4	4	6	4	3	6
25	4	4	4	4	4	4	2	4	4	4	4	2	2	4	2	2	2	2	2	4	4	4	4	2	3	4
26	4	2	2	2	2	2	4	4	4	4	4	2	2	2	4	4	4	2	2	4	4	4	4	2	3	4
27	4	2	4	4	4	2	4	8	4	4	2	4	4	4	4	2	2	4	4	4	4	4	4	2	3	8
28	4	(PF)	4	2	4	2	4	4	4	4	2	4	4	4	2	2	4	2	2	2	4	4	4	4	3	4
29	4	2	2	2	4	4	4	4	2	4	4	2	4	4	4	4	4	2	2	4	4	4	2	2	3	4
30	4	4	2	2	2	2	4	4	2	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	3	4
31	2	2	2	2	4	2	2	2	2	2	2	2	2	0	0	0	0	0	2	0	2	2	2	0	1	4
AV	2	2	2	2	2	2	3	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
PK	6	6	6	6	6	6	9	8	6	6	4	4	4	6	6	6	6	6	6	6	6	6	6	6		9

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	2	2	2	2	0	0	4	4	2	0	2	2	2	2	0	0	0	2	4
2	2	2	2	2	2	0	2	2	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	2
3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	2
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	(PF)	0	2
6	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
14	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
21	0	0	0	0	0	0	0	4	0	0	0	0	0	0	(CA)	0	0	0	0	0	0	0	0	0	0	4
22	0	0	0	0	0	0	0	2	(CA)	(CA)	(CA)	(CA)	(CA)	2	2	2	2	4	4	4	2	4	2	0	1	4
23	4	2	2	4	2	4	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	2	2	2	2	4	2	2	4	0	1	4
25	2	2	2	2	2	2	0	2	2	2	2	0	0	2	0	0	0	0	0	2	2	2	2	0	1	2
26	2	0	0	0	0	0	2	2	2	2	2	0	0	0	2	2	2	0	0	2	2	2	2	0	1	2
27	2	0	2	2	2	0	2	4	2	2	0	2	2	2	2	0	0	2	2	2	2	2	2	0	1	4
28	2	(PF)	2	0	2	0	2	2	2	2	0	2	2	2	0	0	2	0	0	0	2	2	2	0	1	2
29	2	0	0	0	2	2	2	2	0	2	2	0	2	2	2	2	2	0	0	2	2	2	0	0	1	2
30	2	2	0	0	0	0	2	2	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	1	2
31	0	0	2	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
AV	1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	
PK	4	2	2	4	2	4	4	4	2	2	2	2	2	4	4	2	2	4	4	4	2	4	4	0		4

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	104	45	59	61	63	67	74	82	84	74	73	69	67	73	67	73	80	69	71	104
2	65	71	74	74	78	67	59	65	86	88	86	84	86	86	86	88	88	88	88	78	67	71	71	69	78	88
3	74	78	74	71	69	69	71	76	80	86	86	90	96	100	100	102	106	108	106	92	82	80	80	80	86	108
4	78	73	71	67	65	63	67	69	73	74	78	74	74	73	69	69	69	69	69	67	61	61	67	65	69	78
5	65	65	63	57	53	57	49	59	69	71	74	80	82	76	73	74	71	71	76	74	(PF)	(PF)	(PF)	(PF)	68	82
6	57	59	53	61	57	49	39	51	69	71	71	69	69	69	65	63	63	65	65	61	53	55	63	67	61	71
7	61	61	61	61	59	57	47	53	76	84	90	88	84	86	86	86	86	86	100	84	76	76	73	71	75	100
8	69	71	65	69	65	63	53	61	63	65	63	63	63	59	51	57	49	53	53	55	55	45	41	35	58	71
9	27	29	39	29	29	31	27	39	53	53	59	69	71	73	73	74	76	80	78	74	67	57	59	57	55	80
10	55	59	63	59	59	59	49	59	73	84	88	100	98	94	92	102	106	104	96	88	76	76	69	74	78	106
11	67	73	67	74	69	69	59	65	76	86	94	100	100	102	100	102	102	98	96	90	90	80	82	84	84	102
12	82	84	80	80	84	80	69	67	74	84	98	102	98	98	98	96	94	92	90	80	71	74	78	74	85	102
13	74	76	59	67	71	63	69	69	80	84	86	88	90	90	88	90	88	88	86	82	78	80	61	61	78	90
14	65	67	74	78	74	76	67	69	78	80	82	90	96	100	102	104	108	110	106	88	86	90	84	92	86	110
15	88	86	88	86	92	82	80	78	80	80	80	80	82	90	98	100	96	96	90	84	78	80	80	78	86	100
16	71	71	71	71	71	73	76	78	78	78	84	86	86	88	84	82	82	82	80	74	74	73	67	76	77	88
17	74	74	69	63	65	63	65	69	67	73	76	78	80	80	82	84	84	84	80	78	71	74	88	82	75	88
18	69	71	80	82	78	69	59	65	74	78	88	94	92	94	94	96	92	90	98	94	78	78	80	74	82	98
19	78	80	80	78	71	74	67	73	92	102	106	100	102	102	100	100	100	100	98	88	80	80	76	78	88	106
20	84	78	82	86	82	82	67	74	78	92	90	90	88	88	90	92	98	98	94	84	82	80	69	71	84	98
21	71	80	82	76	78	74	71	73	80	84	86	88	84	86	86	84	84	80	80	78	76	73	71	67	79	88
22	65	69	67	67	63	63	61	67	71	82	88	92	92	96	100	98	96	94	86	80	74	82	78	78	80	100
23	69	71	80	86	86	84	80	82	(OR)	(OR)	76	88	90	88	88	86	86	86	88	82	78	71	78	82	82	90
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	76	80	84	86	90	88	86	80	71	69	59	49	51	59	57	57	71	90
25	63	69	71	67	57	61	47	63	69	78	90	96	94	86	86	86	88	86	84	67	69	78	57	59	74	96
26	41	45	49	51	51	53	51	51	61	74	84	90	84	82	82	78	90	80	84	76	71	73	69	53	68	90
27	51	49	45	45	35	37	55	71	80	88	98	90	94	92	90	98	82	78	65	67	45	45	37	24	65	98
28	51	(PF)	39	33	33	43	22	27	35	55	74	84	82	74	71	76	71	71	71	55	47	47	27	27	53	84
29	27	25	22	20	16	12	16	25	35	41	57	63	67	69	73	76	78	78	71	63	57	45	35	39	46	78
30	33	31	25	25	24	27	29	45	51	59	63	76	82	82	86	84	84	82	82	74	67	71	67	65	59	86
31	61	67	63	61	61	61	57	61	67	84	86	80	82	82	82	84	86	86	80	73	71	69	67	76	73	86
AV	63	65	64	64	62	61	58	62	70	77	82	85	86	86	85	86	85	85	83	76	70	70	67	66	73	
PK	88	86	88	86	92	84	104	82	92	102	106	102	102	102	102	104	108	110	106	94	90	90	88	92		110

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	100	100	0	0	0	0	0	0	100	100	29	100
2	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	100
3	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	(PF)	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	29	100
8	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	19	100
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	100	100	100	100	100	100	0	0	0	0	0	100	100	100	100	100	100	100	0	0	0	0	0	62	100
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	100	43	100
13	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	100
14	0	100	100	100	100	100	100	0	0	0	0	0	100	100	100	100	100	100	100	0	0	0	100	100	72	100
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	14	100
16	0	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	43	100
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	24	100
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	0	0	0	0	0	34	100
20	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
21	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	0	0	0	0	0	53	100
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	0	19	100
27	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
28	0	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	15	100
29	100	100	0	0	0	0	0	0	100	100	0	100	100	0	0	0	100	100	100	100	0	0	0	0	48	100
30	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	34	100
31	0	0	0	0	100	100	100	100	0	0	0	0	100	100	0	100	100	100	100	100	0	0	0	0	53	100
AV	20	33	32	24	28	28	24	20	11	8	7	11	26	22	22	22	26	30	30	22	15	11	23	27	21	
PK	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		100

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	5	3	5	5	8	5	8	8	8	5	5	5	5	5	5	5	5	6	8
2	5	5	5	5	5	5	3	3	5	5	5	5	8	5	5	8	5	5	5	8	5	5	5	5	5	8
3	3	5	5	3	5	5	5	5	5	5	5	5	8	5	5	8	5	5	5	5	5	3	5	3	5	8
4	3	3	5	3	3	3	3	3	5	3	5	5	5	5	5	3	5	5	3	3	3	3	3	3	4	5
5	3	3	3	3	3	3	3	3	3	5	3	3	3	3	5	5	3	3	3	3	(PF)	(PF)	(PF)	(PF)	3	5
6	3	0	3	3	3	3	3	3	3	3	3	5	5	5	5	5	5	5	5	5	5	5	5	3	4	5
7	3	5	5	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	3	5	5	5	5
8	5	3	5	3	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5
9	3	3	3	3	3	3	3	3	3	3	3	5	3	5	3	3	3	5	5	3	3	5	5	5	3	5
10	3	5	3	3	3	3	5	3	3	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	4	5
11	5	5	5	5	3	5	3	3	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	5	5
12	3	5	3	5	3	3	3	3	3	5	5	8	5	5	5	5	5	5	5	5	5	5	3	3	4	8
13	3	5	3	5	3	3	3	3	3	5	5	5	5	5	5	5	5	3	5	3	5	3	3	3	4	5
14	3	3	3	3	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	5	5	5
15	3	5	5	3	5	5	3	3	5	5	5	5	5	8	5	5	5	5	5	3	5	5	5	3	5	8
16	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	0	3	3	0	3	3	3	0	2	5
17	0	3	0	3	0	3	3	3	0	3	3	3	3	0	3	0	0	3	3	3	3	0	0	0	2	3
18	0	0	0	0	3	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	0	3	3	3	2	3
19	0	3	3	3	0	0	3	0	5	3	3	5	5	5	5	3	3	3	3	3	3	3	3	3	3	5
20	3	3	3	0	0	0	3	0	3	3	3	3	5	3	3	3	3	3	3	3	3	3	3	0	2	5
21	0	0	3	3	0	0	0	0	3	5	3	5	5	3	(CA)	8	5	5	5	5	5	5	3	3	3	8
22	3	3	5	3	3	5	3	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	1	5
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	0	0	3	3	0	3	1	3
28	0	(PF)	0	0	0	0	0	0	0	3	3	0	3	0	0	0	0	3	0	0	0	0	0	0	0	3
29	0	0	0	0	0	3	0	0	3	0	0	0	3	0	0	3	3	3	3	3	3	0	0	0	1	3
30	0	0	0	0	0	0	3	3	3	3	3	5	5	3	3	3	3	3	3	3	3	3	3	3	2	5
31	3	3	3	3	3	3	3	3	3	5	5	5	5	5	5	3	5	3	5	5	3	5	5	5	4	5
AV	2	3	3	2	2	2	2	2	2	3	3	4	4	3	3	3	3	3	3	3	3	3	3	2	3	
PK	5	5	5	5	5	5	8	5	5	5	5	8	8	8	8	8	5	5	5	8	5	5	5	5		8

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	6	7	4	4	4	6	6	7	7	7	8	8	7	7	4	4	6	8
2	4	3	3	4	4	4	4	6	6	6	6	7	7	6	6	6	4	4	4	4	6	6	4	8	5	8
3	6	4	4	6	4	4	6	7	7	7	7	8	7	7	7	7	6	7	6	6	6	6	6	6	6	8
4	4	4	4	4	4	3	4	3	4	3	3	3	4	4	4	4	4	3	4	4	3	3	1	1	3	4
5	1	3	3	3	3	6	6	6	4	4	6	6	3	3	4	3	3	3	3	3	(PF)	(PF)	(PF)	(PF)	4	6
6	4	3	1	1	1	1	1	1	1	0	3	4	1	3	1	3	3	3	1	3	3	1	3	0	2	4
7	1	1	0	1	3	3	3	3	1	1	3	1	3	1	1	3	1	1	1	1	0	0	0	0	2	3
8	0	1	1	0	0	0	1	1	1	3	3	3	3	1	1	0	0	0	0	0	0	0	1	1	1	3
9	1	0	0	0	3	4	4	1	1	1	3	3	1	1	1	1	3	1	1	1	1	0	1	1	2	4
10	0	0	0	0	0	1	0	0	0	1	1	0	1	3	3	1	1	1	0	1	1	1	0	0	1	3
11	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	1	1	1	3	3	1	3	3	1	1	1	0	0	0	1	3
14	1	0	0	1	1	0	0	0	1	3	3	3	3	3	3	3	1	1	3	1	1	3	3	1	2	3
15	0	1	1	0	1	0	0	1	1	1	3	3	3	4	3	3	1	1	1	0	0	0	0	0	1	4
16	0	0	0	0	0	0	0	0	0	0	1	1	1	3	6	4	3	1	0	0	0	0	0	0	1	6
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	3	1	1	3	3	3	3	3	4	3	3	3	3	1	1	1	2	4
21	0	0	0	0	0	0	0	1	1	3	3	3	3	3	(CA)	6	4	4	4	4	3	0	1	0	2	6
22	0	0	0	1	1	0	0	1	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	1
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	(PF)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	
PK	6	4	4	6	4	6	6	8	7	7	7	8	7	7	7	7	7	7	8	8	7	7	6	8		8

PARTICULATE DATA
UG/M3

C-B TRACT
JULY 1982
OCCIDENTAL OIL SHALE, INC.

DAY	AB20	AB23	STATION AB26	AD42	AD56
2	( )	26.7	23	( )	( )
6	( )	16.6	14.1	( )	( )
10	( )	16.3	10.6	( )	( )
14	( )	15.1	22.7	( )	( )
18	( )	28.1	28.3	( )	( )
22	( )	18.4	16.4	( )	( )
26	( )	15.7	17.7	( )	( )
30	( )	9.4	( )	( )	( )
AVE	( )	18.3	19	( )	( )
GM	( )	17.4	18.1	( )	( )
PEAK	( )	28.1	28.3	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	3	6	7	8	8	8	8	8	6	5	4	4	4	3	3	3	(CM)	5	8
2	2	2	0	0	0	0	1	(CM)	3	4	4	5	7	7	5	6	4	4	4	2	3	3	(CM)	0	3	7
3	1	3	1	2	2	1	3	4	4	4	4	5	5	4	4	4	4	4	4	3	3	2	2	1	3	5
4	3	2	4	3	2	3	4	4	5	5	5	6	7	6	8	7	7	6	5	4	3	2	1	2	4	8
5	2	2	1	1	2	1	1	3	6	6	6	7	7	7	7	6	1	5	5	4	(PF)	(PF)	(PF)	(PF)	4	7
6	2	1	2	0	0	0	1	1	1	1	2	1	1	1	1	1	1	1	3	3	1	2	3	2	1	3
7	1	1	0	1	0	1	1	2	0	1	1	1	1	0	1	(CM)	2	4	4	4	3	3	2	2	2	4
8	3	1	1	1	0	0	1	1	2	2	2	3	2	2	1	1	1	4	4	2	3	3	2	1	2	4
9	1	1	1	2	2	1	1	1	3	2	3	5	4	6	4	4	4	4	3	2	0	1	1	1	2	6
10	1	0	1	1	0	0	(CM)	0	1	1	1	2	2	3	2	2	3	1	3	3	1	1	1	0	1	3
11	1	0	1	(CM)	0	(CM)	0	2	1	(CM)	1	2	2	1	2	5	3	4	4	4	2	2	1	1	2	5
12	2	1	1	1	0	0	1	1	1	2	2	2	2	3	2	3	2	2	2	2	1	2	1	(CM)	2	3
13	1	1	1	1	1	1	1	2	4	4	4	3	2	4	3	3	4	3	3	2	3	1	0	2	2	4
14	1	1	1	2	0	2	1	1	1	2	4	4	4	4	3	4	2	2	2	3	1	1	1	0	2	4
15	0	0	0	0	1	2	2	1	5	7	6	7	7	6	6	6	7	7	6	4	4	4	5	6	4	7
16	6	5	4	5	5	4	5	6	6	6	6	7	8	6	7	6	7	6	4	4	4	4	1	7	5	8
17	7	6	5	4	4	3	4	6	6	6	5	6	7	8	6	6	6	6	4	4	3	3	3	1	5	8
18	1	2	0	1	1	2	1	1	4	4	3	4	3	2	2	2	3	3	1	0	2	1	1	2	2	4
19	1	0	1	1	0	1	(CM)	0	0	2	1	3	2	1	1	2	2	3	3	1	3	0	1	1	1	3
20	1	1	1	0	1	1	0	0	1	1	3	2	1	2	2	2	1	3	3	2	2	1	0	1	1	3
21	1	0	0	2	2	2	2	2	2	3	2	2	0	2	2	3	2	1	5	7	4	3	3	2	2	7
22	2	1	2	2	2	2	2	2	3	2	3	4	4	4	4	4	2	3	3	1	1	1	1	1	2	4
23	2	1	1	1	3	3	2	4	4	6	5	4	4	4	4	3	4	4	4	3	4	1	3	1	3	6
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	2	1	2	5	1	3	4	2	1	3	4	2	2	2	5
25	3	2	1	3	2	2	1	1	1	1	4	2	2	4	3	1	3	4	4	1	1	1	2	1	2	4
26	1	1	1	1	0	1	0	1	1	2	2	1	3	2	2	2	2	3	3	3	2	1	1	2	2	3
27	1	(CM)	1	1	0	1	0	1	1	1	0	2	3	3	2	2	1	0	1	1	1	1	1	1	1	3
28	1	(PF)	0	0	1	1	1	1	1	0	2	4	2	1	1	0	1	1	1	1	1	1	1	0	1	4
29	0	1	1	0	(CM)	1	1	2	2	2	2	2	3	3	3	4	4	4	4	2	1	1	2	2	2	4
30	2	2	1	1	2	0	0	1	1	1	2	2	2	3	3	3	3	4	4	2	2	1	1	(CM)	2	4
31	0	1	1	1	1	0	(CM)	0	1	1	2	2	4	3	3	2	1	2	2	3	4	1	0	(CM)	2	4
AV	2	2	1	1	1	1	1	2	3	3	3	4	4	4	3	3	3	3	3	3	2	2	2	2	2	
PK	7	6	5	5	5	4	5	6	6	7	8	8	8	8	8	7	7	7	6	7	4	4	5	7		8

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	4	8	9	10	11	10	10	10	8	7	6	5	5	5	5	6	1	7	11
2	2	3	1	0	0	1	1	0	4	6	6	7	9	9	7	8	6	6	6	3	4	4	2	2	4	9
3	4	5	3	2	3	2	4	5	5	4	5	7	7	6	6	6	6	6	4	4	5	5	4	3	5	7
4	5	5	4	5	3	5	5	4	6	6	7	8	8	8	10	10	10	9	7	5	5	3	2	3	6	10
5	3	4	1	2	3	3	1	4	8	8	8	9	8	9	9	8	1	7	7	6	(PF)	(PF)	(PF)	(PF)	5	9
6	3	1	1	0	1	0	1	1	1	1	2	1	1	2	2	1	1	1	4	4	2	2	3	3	2	4
7	1	1	2	1	1	1	1	2	0	1	1	1	1	1	2	0	2	4	5	5	5	5	4	4	2	5
8	4	3	3	2	0	1	1	2	3	2	3	4	3	3	1	2	2	4	5	3	4	4	4	1	3	5
9	1	3	2	2	3	1	1	1	3	3	4	6	6	8	5	5	6	5	4	3	1	2	0	0	3	8
10	0	(CM)	2	1	0	1	(CM)	0	1	1	2	3	2	4	3	3	4	2	4	4	1	0	0	0	2	4
11	1	0	2	0	1	(CM)	0	3	1	0	1	3	3	2	2	7	4	6	6	5	4	4	2	2	3	7
12	2	2	1	1	0	0	2	1	1	2	3	2	2	4	3	4	3	3	3	2	3	2	0	0	2	4
13	0	0	1	2	1	1	1	4	5	5	6	4	3	5	4	4	5	4	4	3	4	1	1	3	3	6
14	1	1	1	4	1	3	1	2	1	3	5	6	6	4	4	5	3	2	4	4	2	1	1	1	3	6
15	0	0	0	0	1	2	3	2	7	9	8	9	9	8	8	8	9	9	8	6	7	8	8	9	6	9
16	10	8	8	9	8	8	8	8	8	8	9	9	10	8	9	8	9	8	6	6	7	7	1	9	8	10
17	10	8	8	5	5	4	5	9	8	8	7	8	10	10	8	9	8	8	6	5	5	4	4	2	7	10
18	1	2	0	1	2	2	2	2	5	5	4	5	4	3	3	2	4	4	2	0	4	1	1	2	3	5
19	1	0	1	(CM)	1	1	(CM)	0	0	2	1	4	2	1	1	3	2	4	4	3	4	2	1	1	2	4
20	1	0	1	1	0	1	1	0	1	1	4	2	1	2	3	2	2	4	4	3	4	2	1	1	2	4
21	1	(CM)	0	2	3	3	3	2	3	4	3	3	0	2	3	4	2	1	7	10	5	4	4	3	3	10
22	4	2	3	3	4	3	2	3	4	3	4	4	6	6	5	5	3	4	4	1	2	2	1	2	3	6
23	1	0	0	1	4	4	3	4	5	8	7	5	5	5	4	4	4	6	6	4	6	2	4	2	4	8
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	3	2	2	1	3	6	1	4	6	4	3	4	6	4	4	3	6
25	5	2	1	4	3	3	1	1	1	1	5	3	2	5	4	1	4	6	6	2	2	2	2	2	3	6
26	2	2	1	2	1	1	0	2	1	2	3	1	4	3	3	3	2	4	4	4	3	2	1	2	2	4
27	2	1	2	2	1	2	1	2	2	2	0	3	3	4	2	2	1	1	2	2	1	1	1	1	2	4
28	2	(PF)	(CM)	0	0	1	1	1	1	0	3	5	3	2	2	0	1	2	1	2	1	1	2	1	2	5
29	0	0	1	0	0	1	1	2	3	3	2	2	4	4	4	4	5	4	4	4	2	2	3	3	2	5
30	3	3	1	1	2	1	0	2	1	2	2	3	3	4	4	4	4	5	4	4	4	3	0	0	3	5
31	1	2	1	0	1	1	0	(CM)	1	1	2	3	4	3	4	3	2	2	3	4	6	1	0	0	2	6
AV	2	2	2	2	2	2	2	3	3	4	4	5	5	5	5	4	4	5	5	4	4	3	2	2	3	
PK	10	8	8	9	8	8	8	9	8	9	10	11	10	10	10	10	10	9	8	10	7	8	8	9		11

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	8	11	11	12	12	11	11	10	8	7	6	7	6	6	7	2	8	12
2	0	2	2	1	1	2	2	1	4	7	7	8	10	10	8	8	7	7	6	4	4	4	4	5	5	10
3	6	8	6	1	2	4	6	6	5	5	6	7	7	6	7	7	7	7	5	5	5	6	6	6	6	8
4	6	5	4	5	4	6	7	5	7	7	8	8	9	10	11	11	11	10	8	6	7	4	3	3	7	11
5	3	4	1	3	4	3	1	4	9	9	9	10	10	10	10	8	1	8	8	7	(PF)	(PF)	(PF)	(PF)	6	10
6	3	1	1	1	2	2	1	1	1	1	3	1	1	2	2	2	1	2	4	5	2	2	3	4	2	5
7	2	2	2	1	2	1	2	2	1	2	2	1	1	1	2	0	2	5	6	6	7	7	6	5	3	7
8	6	4	4	3	1	1	3	2	3	3	4	4	4	4	1	2	2	5	6	3	6	5	5	2	3	6
9	1	4	3	2	3	1	1	1	4	3	4	7	7	8	6	6	7	6	4	4	2	2	(CM)	1	4	8
10	0	1	2	2	1	1	0	0	2	1	2	3	2	4	3	4	4	2	4	4	1	1	0	0	2	4
11	1	1	1	1	1	0	1	3	1	0	2	4	3	2	3	8	4	6	6	6	5	4	2	2	3	8
12	2	3	1	0	0	3	2	1	1	2	4	3	2	4	3	4	3	3	3	3	4	3	1	1	2	4
13	1	0	1	2	(CM)	2	2	4	5	5	6	4	3	5	4	4	5	4	4	4	5	3	1	3	3	6
14	1	2	2	5	1	2	1	2	1	3	6	6	6	5	5	6	4	3	4	5	2	1	1	1	3	6
15	1	0	1	1	2	0	3	3	8	10	9	10	11	9	9	9	10	10	9	8	9	10	11	12	7	12
16	12	10	10	11	11	10	10	9	8	9	10	10	11	9	10	10	10	9	8	8	9	9	2	10	9	12
17	12	10	10	7	7	5	7	11	9	8	8	9	11	12	9	10	8	8	7	7	7	5	4	3	8	12
18	2	2	1	1	1	0	2	3	6	5	5	5	4	3	4	2	5	5	2	0	4	2	0	3	3	6
19	1	1	1	2	1	(CM)	1	0	1	2	2	5	3	1	1	3	3	4	5	4	5	4	2	1	2	5
20	1	1	2	1	0	1	1	1	1	1	5	3	2	3	4	3	2	4	4	4	4	3	1	1	2	5
21	1	1	1	3	3	3	4	3	4	4	4	3	1	3	3	4	3	2	8	12	7	5	5	4	4	12
22	5	2	3	4	4	3	3	4	4	3	4	5	6	6	6	5	3	4	4	2	2	3	2	4	4	6
23	3	1	0	1	4	5	4	5	6	8	7	6	6	6	5	5	5	7	7	5	8	4	5	3	5	8
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	4	2	3	2	4	7	2	5	8	5	4	5	7	4	4	4	8
25	5	2	1	4	4	3	1	2	2	2	5	3	3	6	4	2	5	7	7	3	3	2	3	2	3	7
26	3	3	2	2	1	1	1	2	1	2	3	1	4	3	4	3	3	4	4	4	4	3	1	3	3	4
27	3	2	2	2	2	2	1	2	2	2	0	3	4	4	2	2	1	1	1	2	1	2	1	2	2	4
28	3	(PF)	2	1	3	1	1	1	2	1	4	5	4	1	2	1	1	2	2	2	1	2	1	2	2	5
29	0	2	3	1	1	2	2	3	3	3	3	3	4	4	4	5	5	5	5	4	3	2	3	4	3	5
30	4	4	2	2	2	1	1	2	1	2	2	4	3	4	4	4	5	5	5	5	5	4	0	1	3	5
31	3	2	2	1	1	2	1	0	1	1	3	3	4	4	4	4	2	3	3	5	6	4	1	1	3	6
AV	3	3	3	2	3	2	2	3	4	4	5	5	5	5	5	5	5	5	5	5	5	4	3	3	4	
PK	12	10	10	11	11	10	10	11	9	11	11	12	12	12	11	11	11	10	9	12	9	10	11	12		12

WIND SPEED @10M
METERS/SEC

CB TRACT
MRI AD20
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																									
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	2	2	4	5	5	6	5	6	5	5	5	4	3	2	1	1	2	2	2	4	6
2	2	2	2	2	3	2	3	2	2	4	4	5	5	5	5	4	4	4	3	1	1	2	2	2	3	5
3	3	2	2	3	5	2	3	2	4	3	4	4	4	4	4	4	3	3	2	1	1	2	2	2	3	5
4	2	3	3	3	4	5	3	2	3	4	5	5	5	5	5	5	5	4	4	1	2	2	2	3	4	5
5	2	2	2	1	4	2	2	3	4	5	5	5	6	6	7	7	3	6	5	(IM)	(IM)	(IM)	(IM)	(IM)	4	7
6	(IM)	1	1	2	2	2	3	2	1	1	2	2	2	2	2	2	2	1	1	2	2	2	3	3	2	3
7	3	2	2	3	2	2	3	3	1	2	2	2	3	2	2	2	1	2	2	2	1	2	2	2	2	3
8	2	2	2	1	2	1	1	1	1	2	3	2	2	2	2	2	1	3	3	4	1	3	2	1	2	4
9	2	1	2	2	2	1	2	2	1	2	3	4	4	3	4	4	4	4	2	2	2	1	2	2	3	4
10	2	2	2	2	2	2	2	1	1	2	2	2	2	3	2	3	3	2	3	2	2	3	3	2	2	3
11	2	2	2	2	1	2	2	2	3	1	1	3	3	3	4	3	4	3	3	3	2	2	2	2	2	4
12	2	2	1	2	2	2	1	2	3	2	2	2	3	4	3	3	3	3	2	3	2	3	2	3	2	4
13	2	1	2	2	2	2	2	3	2	4	5	3	3	3	6	4	5	3	3	1	1	2	1	2	3	6
14	2	2	2	2	2	2	1	2	2	3	4	3	4	5	5	4	2	1	1	2	2	2	3	2	3	5
15	2	2	2	2	3	3	3	4	3	4	5	5	5	5	5	5	5	4	3	1	3	3	3	3	3	5
16	3	2	3	3	3	3	2	3	4	5	5	5	6	5	6	5	5	4	2	3	1	2	3	2	4	6
17	4	3	2	3	4	4	3	3	4	4	4	5	5	6	5	5	4	3	2	2	2	2	3	3	3	6
18	2	1	1	2	2	2	4	2	2	3	3	3	3	3	3	2	1	2	4	2	1	2	2	2	2	4
19	2	2	2	2	2	2	2	2	1	1	3	4	3	3	3	2	2	4	2	1	2	2	2	3	2	4
20	2	3	2	2	2	2	1	2	1	2	4	3	4	3	2	2	2	3	2	2	2	2	2	2	2	4
21	2	2	3	3	2	1	1	1	2	2	2	2	2	2	3	3	3	2	8	5	4	4	2	3	3	8
22	2	2	3	3	2	2	4	2	2	2	3	3	4	4	3	4	3	3	2	1	1	2	1	2	3	4
23	2	2	2	2	2	3	3	3	3	4	4	3	3	3	4	3	3	3	3	2	3	2	2	2	3	4
24	3	2	1	2	2	2	1	2	1	2	3	2	2	4	4	3	4	3	2	1	1	1	2	3	2	4
25	3	2	3	3	4	3	1	2	1	1	2	3	3	4	2	2	3	4	2	2	1	1	1	1	2	4
26	1	1	1	2	2	2	3	2	1	2	1	3	3	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	2	3
27	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
28	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AV	2	2	2	2	3	2	2	2	2	3	3	3	4	4	4	4	3	3	3	2	2	2	2	2	3	
PK	4	3	3	3	5	5	4	4	5	5	6	5	6	6	7	7	5	6	8	5	4	4	3	3		8

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	189	155	185	194	202	202	202	194	188	205	216	213	215	224	204	196	192	(CM)	199
2	171	205	189	56	201	194	94	(CM)	217	221	206	213	212	216	219	215	227	229	228	222	210	206	(CM)	248	208
3	180	189	197	79	80	115	197	197	209	212	215	214	199	205	206	211	219	206	198	199	207	207	202	201	196
4	185	185	160	148	169	155	161	163	202	211	213	185	190	201	202	199	195	228	238	218	194	231	352	118	191
5	280	261	163	274	148	187	55	211	223	226	212	225	219	244	264	230	319	281	282	301	(PF)	(PF)	(PF)	(PF)	241
6	174	194	222	56	82	101	65	25	330	341	39	320	340	286	207	190	214	204	201	189	223	138	153	169	183
7	124	166	197	122	171	199	112	87	201	278	341	169	110	262	314	(CM)	219	208	184	186	198	197	174	179	183
8	179	184	243	273	55	324	243	306	347	109	156	197	166	303	307	274	58	55	103	297	256	128	155	291	244
9	151	182	161	136	140	159	68	73	235	280	261	261	222	218	247	289	288	330	338	343	103	175	243	83	213
10	212	201	174	195	258	218	(CM)	30	50	43	320	322	331	314	323	319	337	323	319	314	211	197	207	143	284
11	225	197	299	(CM)	341	(CM)	45	324	0	(CM)	310	309	328	330	211	216	64	69	70	235	208	131	139	142	296
12	117	122	217	340	158	233	82	30	343	340	311	311	291	274	336	303	292	231	273	227	229	143	191	(CM)	273
13	212	228	165	208	62	240	188	132	113	98	94	76	114	191	299	59	109	77	105	126	166	177	278	217	147
14	146	211	164	168	176	116	106	79	298	230	211	214	215	253	276	279	262	258	222	210	239	189	208	256	214
15	180	225	169	238	164	86	110	108	210	205	209	204	218	231	226	231	225	222	218	212	197	199	201	204	201
16	202	205	204	205	202	201	192	201	207	207	217	222	217	219	225	225	229	210	207	195	197	196	311	178	210
17	167	180	176	172	183	159	193	210	199	207	209	204	219	211	222	236	240	223	225	223	203	278	213	291	209
18	93	201	191	161	128	107	92	227	214	216	240	225	256	229	234	293	207	202	310	211	205	210	172	235	207
19	231	238	194	219	261	192	(CM)	78	45	19	330	314	0	12	301	350	53	343	325	65	144	171	294	134	327
20	187	219	214	199	215	228	323	186	336	343	332	339	329	83	21	356	55	53	46	87	139	176	261	180	286
21	220	153	144	173	141	134	131	93	219	207	190	148	315	351	352	314	311	227	140	161	150	124	191	107	165
22	114	162	143	144	110	113	133	205	190	219	184	204	217	202	216	258	259	308	309	255	182	134	199	197	190
23	82	76	36	121	143	151	143	138	172	196	197	194	216	209	199	200	193	226	230	189	172	229	282	313	183
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	319	243	198	209	205	318	322	332	100	82	66	144	157	166	153	133	169
25	143	153	144	164	143	134	222	107	62	278	242	219	249	343	29	28	114	124	156	137	358	38	237	234	151
26	236	258	245	226	202	159	97	51	14	318	336	350	232	230	131	86	103	53	63	34	64	120	309	241	72
27	274	(CM)	224	221	251	135	111	59	50	349	41	192	355	316	294	44	241	45	185	182	200	187	339	144	219
28	274	(PF)	161	234	207	172	273	289	309	277	205	199	284	196	132	124	30	322	161	281	19	155	222	160	223
29	149	217	204	253	(CM)	311	282	293	299	296	325	345	333	339	336	344	344	6	39	41	356	265	242	259	310
30	246	251	230	232	227	193	261	316	289	319	338	319	332	324	335	350	351	18	37	74	132	146	329	(CM)	306
31	19	135	210	221	233	102	(CM)	0	5	350	347	357	5	342	8	339	8	332	73	134	170	217	131	(CM)	9
PV	183	195	190	190	170	163	136	109	264	257	247	235	251	259	267	277	254	263	205	200	188	180	219	192	216

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	176	157	187	197	203	203	205	194	188	206	217	213	218	227	208	197	197	283	203
2	145	201	199	24	199	196	143	214	220	222	209	216	215	218	221	217	228	233	230	227	220	215	201	195	209
3	190	192	200	93	104	193	191	196	209	213	216	215	199	208	207	212	221	208	198	195	202	202	198	192	197
4	179	170	149	136	156	169	164	164	203	212	215	187	191	204	203	201	196	231	241	223	199	226	354	112	190
5	286	275	166	290	136	173	61	212	225	228	213	226	221	247	267	232	315	280	281	297	(PF)	(PF)	(PF)	(PF)	243
6	149	209	208	101	191	185	85	39	319	342	39	316	335	288	205	199	211	205	201	188	208	127	134	152	188
7	141	153	201	130	152	199	121	90	211	277	333	180	117	241	313	90	222	210	184	186	199	193	179	172	180
8	179	198	241	279	20	335	265	306	346	110	155	198	163	307	326	277	57	56	101	305	260	123	152	265	259
9	164	193	168	131	131	146	69	78	236	281	259	258	223	220	249	292	292	329	336	345	76	137	291	53	226
10	135	(CM)	123	141	325	235	(CM)	53	53	45	321	319	330	307	318	314	335	323	315	318	257	164	207	96	328
11	159	197	299	297	338	(CM)	80	322	0	59	308	309	325	332	215	217	64	68	71	238	207	122	137	148	321
12	115	114	192	338	45	259	103	47	343	336	308	310	292	278	331	300	290	234	277	226	222	163	185	45	291
13	215	240	153	189	49	299	158	123	112	97	92	76	112	193	302	59	108	79	106	121	149	163	338	230	129
14	125	130	141	148	169	121	103	85	295	231	213	216	217	255	280	284	266	258	225	205	241	184	208	305	209
15	248	71	202	8	162	82	114	118	212	206	211	206	220	233	228	232	227	223	220	217	202	203	204	208	204
16	207	209	206	209	206	202	195	204	209	210	219	223	220	221	228	226	231	211	209	197	198	197	308	179	212
17	167	180	177	178	187	166	197	212	201	210	210	206	221	213	225	239	242	224	227	226	203	274	218	289	211
18	67	191	207	143	128	103	118	225	217	219	244	227	256	232	237	288	206	206	318	203	181	216	121	265	207
19	262	320	205	(CM)	298	232	(CM)	97	42	23	327	312	358	9	303	347	55	342	322	71	130	140	297	130	346
20	172	210	189	208	239	246	305	194	340	339	329	337	318	85	24	352	53	57	49	78	122	133	283	199	320
21	219	(CM)	102	139	121	117	124	94	221	207	190	149	318	351	350	312	310	226	140	160	152	127	192	120	157
22	119	164	143	153	107	106	136	199	188	219	185	203	218	202	218	258	253	306	310	283	163	119	178	203	188
23	127	171	45	134	131	140	139	138	172	198	199	195	217	209	200	200	192	229	231	192	179	231	280	310	187
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	317	241	197	205	209	319	320	352	101	85	70	121	143	161	161	130	156
25	138	153	128	150	141	124	202	115	73	274	242	222	246	343	32	28	114	124	155	145	16	37	255	262	143
26	263	278	262	243	214	172	120	56	15	315	335	355	235	235	131	88	101	51	61	37	65	109	323	248	4
27	282	319	243	231	253	124	98	62	54	349	41	198	354	315	295	50	239	33	174	169	174	146	356	104	0
28	282	(PF)	(CM)	299	176	143	261	286	315	270	204	202	295	217	135	131	32	315	143	278	4	144	222	203	236
29	110	146	225	249	256	302	289	292	298	294	323	342	332	336	333	343	343	5	41	43	359	283	259	268	313
30	257	274	265	256	252	240	270	316	287	321	335	319	333	323	334	348	351	18	37	71	116	132	309	238	308
31	30	119	159	270	298	74	140	(CM)	11	351	346	353	3	339	8	339	3	329	76	127	158	178	163	180	28
PV	175	190	188	186	171	172	142	135	264	258	248	236	253	260	269	278	255	265	203	199	182	167	222	199	225

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	168	160	190	198	203	205	204	195	190	206	217	213	220	229	217	206	206	265	205
2	149	216	214	180	173	193	186	199	222	220	212	218	215	218	222	218	229	233	231	232	230	225	205	197	210
3	195	201	202	161	142	205	188	197	209	215	215	215	201	209	208	211	222	210	200	195	210	215	204	203	202
4	195	172	148	142	164	178	171	169	204	213	216	189	193	205	203	201	197	232	241	226	208	237	349	110	194
5	290	285	190	297	122	155	133	211	226	229	214	227	221	246	266	233	315	286	287	303	(PF)	(PF)	(PF)	(PF)	242
6	141	225	188	189	198	203	173	66	320	349	45	318	339	293	208	201	206	207	202	189	208	128	125	143	195
7	151	156	198	124	144	207	135	105	220	279	343	192	128	226	320	67	226	210	186	189	207	195	179	172	182
8	178	210	235	289	0	338	287	309	352	113	159	199	165	302	323	292	58	62	104	302	260	126	153	200	254
9	190	202	172	141	137	170	41	92	240	281	265	264	230	221	249	292	292	333	340	349	66	125	(CM)	273	238
10	68	50	116	133	96	110	262	76	67	53	330	323	335	311	324	318	338	325	321	325	299	167	259	45	2
11	133	157	307	289	358	258	207	327	13	60	315	315	331	342	214	216	69	70	74	241	209	119	143	153	291
12	131	110	150	315	164	69	122	72	353	338	313	318	295	282	336	307	293	239	280	229	233	204	211	169	265
13	148	126	121	184	(CM)	346	128	116	113	102	98	80	119	194	303	61	112	86	111	125	145	159	8	246	118
14	133	109	136	139	187	128	113	99	285	237	217	217	218	255	278	284	265	260	228	215	254	196	204	301	212
15	258	39	220	104	170	90	134	134	212	207	213	208	220	232	227	233	228	224	222	221	210	208	207	210	205
16	210	215	211	212	211	209	199	206	210	212	220	225	220	222	228	226	231	213	211	201	204	204	293	180	215
17	169	181	179	184	192	178	202	212	203	211	210	208	222	212	226	241	242	225	230	230	213	267	224	297	214
18	61	161	231	197	148	59	154	228	219	222	247	228	257	237	237	294	208	210	323	195	172	225	63	287	217
19	301	349	210	197	352	(CM)	193	107	43	27	331	321	3	18	315	351	57	346	327	79	121	134	271	8	0
20	122	110	156	221	0	279	282	249	350	345	334	339	315	89	34	357	53	66	55	76	119	129	343	230	22
21	247	143	142	139	129	112	127	106	222	209	194	154	322	356	354	320	316	235	144	162	156	139	193	140	163
22	135	181	148	162	114	114	145	193	189	222	189	205	219	205	220	256	261	311	321	348	151	112	164	208	187
23	183	243	212	156	140	137	140	144	176	201	200	198	219	211	201	203	193	230	230	198	188	234	285	309	199
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	319	244	201	205	212	320	326	351	103	95	78	116	140	159	166	139	158
25	151	163	161	148	144	135	217	127	86	274	241	225	249	345	36	30	121	130	158	154	22	40	273	279	156
26	286	291	281	264	242	200	155	75	30	320	343	0	239	239	136	100	107	58	65	45	70	109	332	266	352
27	298	329	275	258	302	109	96	69	61	356	51	204	357	322	304	51	239	31	142	158	143	129	32	80	33
28	298	(PF)	270	345	134	143	245	253	316	287	205	207	297	243	140	126	40	318	131	265	351	240	253	250	255
29	135	80	49	245	264	306	313	302	304	301	330	345	338	341	340	347	347	11	48	47	8	312	280	286	334
30	275	294	309	281	282	274	281	321	292	330	340	328	339	328	339	352	357	21	42	72	109	127	193	262	320
31	240	115	125	111	230	30	147	270	20	351	352	356	6	341	11	346	7	336	81	125	150	181	220	202	28
PV	182	172	190	188	165	158	171	151	260	261	249	239	254	262	270	283	253	264	192	198	183	174	224	223	223

WIND DIRECTION @10M
DEGREES

CB TRACT
MRI AD20
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(IM)	(IM)	(IM)	(IM)	(IM)	95	101	103	145	166	164	183	175	167	146	163	185	224	214	209	82	82	109	84	147
2	106	94	89	81	118	100	117	113	106	192	207	216	194	189	200	206	235	223	230	215	87	111	113	89	151
3	108	100	79	109	122	86	94	121	174	169	170	182	160	168	192	175	205	196	201	77	79	104	114	97	137
4	93	93	118	121	120	117	99	101	172	181	166	156	176	178	184	152	169	226	230	181	109	76	67	91	142
5	282	82	103	106	104	104	108	133	198	222	193	224	239	249	260	263	293	270	268	(IM)	(IM)	(IM)	(IM)	(IM)	195
6	(IM)	97	105	92	92	108	121	128	88	200	208	233	241	107	157	154	172	283	231	73	79	118	118	118	144
7	119	108	87	124	109	91	120	124	98	83	126	100	107	94	264	281	27	190	164	112	65	84	84	99	119
8	105	103	89	94	99	92	102	214	336	103	101	166	107	248	130	81	88	80	112	288	222	77	94	42	132
9	112	109	95	89	114	94	98	100	331	275	266	251	207	202	252	265	278	286	310	24	100	120	114	105	175
10	107	105	114	92	102	91	114	120	261	274	260	277	286	270	260	265	263	259	282	15	107	101	114	100	177
11	114	98	82	135	89	90	107	248	238	265	246	253	262	320	259	214	79	56	116	284	43	105	108	105	163
12	94	87	85	87	102	97	83	281	280	277	277	276	279	263	279	273	272	278	292	360	72	112	114	119	197
13	116	84	102	88	112	95	110	105	122	107	108	102	97	130	302	91	100	119	105	71	81	100	99	99	110
14	97	101	105	113	100	110	94	107	289	294	281	269	254	280	275	263	232	226	156	84	95	106	116	95	173
15	97	104	91	86	109	102	110	94	143	172	186	176	190	217	227	235	216	214	196	121	102	93	88	97	144
16	93	91	89	95	94	93	88	169	180	186	226	188	204	220	233	211	203	189	165	103	75	53	96	82	143
17	123	100	76	106	86	86	82	125	163	201	205	176	211	196	222	215	220	214	211	230	45	91	2	329	155
18	13	360	88	90	99	85	124	102	214	235	276	249	254	270	167	279	249	243	248	85	31	73	102	92	168
19	101	94	94	94	96	108	101	118	133	253	281	281	16	302	328	211	252	274	314	55	101	98	92	114	163
20	106	103	86	98	93	95	55	129	267	220	272	279	176	109	144	281	322	97	51	56	95	90	85	93	142
21	93	90	110	108	104	96	305	279	276	207	107	48	290	271	272	274	265	113	108	110	84	77	94	89	161
22	90	95	102	105	102	104	117	152	138	248	227	210	181	214	244	331	297	281	296	68	57	101	96	91	164
23	84	92	95	94	101	121	121	100	142	189	175	184	171	177	206	182	176	201	224	138	103	71	104	97	139
24	99	119	93	92	88	114	93	111	245	314	298	286	29	272	299	327	74	79	99	74	86	94	97	109	149
25	114	109	114	114	118	120	97	116	117	248	137	162	293	17	119	94	112	108	102	359	46	94	159	84	131
26	106	91	100	102	111	115	121	119	249	279	302	276	243	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	170
27	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
28	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
PV	107	108	96	101	103	100	111	139	196	214	210	208	194	205	225	219	199	197	197	141	85	93	100	105	154

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	189	155	185	194	202	202	202	194	188	205	216	213	215	224	204	196	192	***	200	5.0
2	171	205	189	56	201	194	94	***	217	221	206	213	212	216	219	215	227	229	228	222	210	206	***	248	215	3.0
3	180	189	197	79	80	115	197	197	209	212	215	214	199	205	206	211	219	206	198	199	207	207	202	201	202	2.8
4	185	185	160	148	169	155	161	163	202	211	213	185	190	201	202	199	195	228	238	218	194	231	352	118	196	3.8
5	280	261	163	274	148	187	55	211	223	226	212	225	219	244	264	230	319	281	282	301	***	***	***	***	241	3.2
6	174	194	222	56	82	101	65	25	330	341	39	320	340	286	207	190	214	204	201	189	223	138	153	169	188	0.5
7	124	166	197	122	171	199	112	87	201	278	341	169	110	262	314	***	219	208	184	186	198	197	174	179	186	1.1
8	179	184	243	273	55	324	243	306	347	109	156	197	166	303	307	274	58	55	103	297	256	128	155	291	187	0.3
9	151	182	161	136	140	159	68	73	235	280	261	261	222	218	247	289	288	330	338	343	103	175	243	83	253	1.2
10	212	201	174	195	258	218	***	30	50	43	320	322	331	314	323	319	337	323	319	314	211	197	207	143	314	0.9
11	225	197	299	***	341	***	45	324	0	***	310	309	328	330	211	216	64	69	70	235	208	131	139	142	222	0.1
12	117	122	217	340	158	233	82	30	343	340	311	311	291	274	336	303	292	231	273	227	229	143	191	***	283	0.7
13	212	228	165	208	62	240	188	132	113	98	94	76	114	191	299	59	109	77	105	126	166	177	278	217	124	1.3
14	146	211	164	168	176	116	106	79	298	230	211	214	215	253	276	279	262	258	222	210	239	189	208	256	223	1.5
15	180	225	169	238	164	86	110	108	210	205	209	204	218	231	226	231	225	222	218	212	197	199	201	204	211	3.8
16	202	205	204	205	202	201	192	201	207	207	217	222	217	219	225	225	229	210	207	195	197	196	311	178	209	5.3
17	167	180	176	172	183	159	193	210	199	207	209	204	219	211	222	236	240	223	225	223	203	278	213	291	208	4.4
18	93	201	191	161	128	107	92	227	214	216	240	225	256	229	234	293	207	202	310	211	205	210	172	235	216	1.4
19	231	238	194	219	261	192	***	78	45	19	330	314	0	12	301	350	53	343	325	65	144	171	294	134	344	0.5
20	187	219	214	199	215	228	323	186	336	343	332	339	329	83	21	356	55	53	46	87	139	176	261	180	27	0.4
21	220	153	144	173	141	134	131	93	219	207	190	148	315	351	352	314	311	227	140	161	150	124	191	107	160	1.2
22	114	162	143	144	110	113	133	205	190	219	184	204	217	202	216	258	259	308	309	255	182	134	199	197	202	1.5
23	82	76	36	121	143	151	143	138	172	196	197	194	216	209	199	200	193	226	230	189	172	229	282	313	192	2.4
24	***	***	***	***	***	***	***	***	319	243	198	209	205	318	322	332	100	82	66	144	157	166	153	133	149	0.5
25	143	153	144	164	143	134	222	107	62	278	242	219	249	343	29	28	114	124	156	137	358	38	237	234	152	0.7
26	236	258	245	226	202	159	97	51	14	318	336	350	232	230	131	86	103	53	63	34	64	120	309	241	47	0.2
27	274	***	224	221	251	135	111	59	50	349	41	192	355	316	294	44	241	45	185	182	200	187	339	144	270	0.2
28	274	***	161	234	207	172	273	289	309	277	205	199	284	196	132	124	30	322	161	281	19	155	222	160	228	0.6
29	149	217	204	253	***	311	282	293	299	296	325	345	333	339	336	344	344	6	39	41	356	265	242	259	329	1.4
30	246	251	230	232	227	193	261	316	289	319	338	319	332	324	335	350	351	18	37	74	132	146	329	***	333	0.9
31	19	135	210	221	233	102	***	0	5	350	347	357	5	342	8	339	8	332	73	134	170	217	131	***	7	0.5
VD	183	196	190	180	164	156	154	172	213	220	220	220	227	237	244	248	231	238	209	203	187	181	207	191	210	
VV	1.2	1.3	1.1	1.0	0.9	1.0	0.9	0.7	1.4	1.8	1.9	2.3	2.3	2.2	1.9	1.8	1.2	0.9	0.8	1.2	1.7	1.4	1.0	1.1		1.2

TOTAL NUMBER OF OBSERVATIONS = 710

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	176	157	187	197	203	203	205	194	188	206	217	213	218	227	208	197	197	283	202	6.7
2	145	201	199	24	199	196	143	214	220	222	209	216	215	218	221	217	228	233	230	227	220	215	201	195	217	3.9
3	190	192	200	93	104	193	191	196	209	213	216	215	199	208	207	212	221	208	198	195	202	202	198	192	202	4.4
4	179	170	149	136	156	169	164	164	203	212	215	187	191	204	203	201	196	231	241	223	199	226	354	112	195	5.2
5	286	275	166	290	136	173	61	212	225	228	213	226	221	247	267	232	315	280	281	297	***	***	***	***	243	4.4
6	149	209	208	101	191	185	85	39	319	342	39	316	335	288	205	199	211	205	201	188	208	127	134	152	182	0.8
7	141	153	201	130	152	199	121	90	211	277	333	180	117	241	313	90	222	210	184	186	199	193	179	172	186	1.7
8	179	198	241	279	20	335	265	306	346	110	155	198	163	307	326	277	57	56	101	305	260	123	152	265	193	0.5
9	164	193	168	131	131	146	69	78	236	281	259	258	223	220	249	292	292	329	336	345	76	137	291	53	255	1.5
10	135	***	123	141	325	235	***	53	53	45	321	319	330	307	318	314	335	323	315	318	257	164	207	96	324	1.2
11	159	197	299	297	338	***	80	322	0	59	308	309	325	332	215	217	64	68	71	238	207	122	137	148	202	0.1
12	115	114	192	338	45	259	103	47	343	336	308	310	292	278	331	300	290	234	277	226	222	163	185	45	284	0.8
13	215	240	153	189	49	299	158	123	112	97	92	76	112	193	302	59	108	79	106	121	149	163	338	230	116	1.8
14	125	130	141	148	169	121	103	85	295	231	213	216	217	255	280	284	266	258	225	205	241	184	208	305	222	1.8
15	248	71	202	8	162	82	114	118	212	206	211	206	220	233	228	232	227	223	220	217	202	203	204	208	213	5.3
16	207	209	206	209	206	202	195	204	209	210	219	223	220	221	228	226	231	211	209	197	198	197	308	179	211	7.7
17	167	180	177	178	187	166	197	212	201	210	210	206	221	213	225	239	242	224	227	226	203	274	218	289	210	6.2
18	67	191	207	143	128	103	118	225	217	219	244	227	256	232	237	288	206	206	318	203	181	216	121	265	218	1.8
19	262	320	205	***	298	232	***	97	42	23	327	312	358	9	303	347	55	342	322	71	130	140	297	130	353	0.8
20	172	210	189	208	239	246	305	194	340	339	329	337	318	85	24	352	53	57	49	78	122	133	283	199	37	0.6
21	219	***	102	139	121	117	124	94	221	207	190	149	318	351	350	312	310	226	140	160	152	127	192	120	155	1.8
22	119	164	143	153	107	106	136	199	188	219	185	203	218	202	218	258	253	306	310	283	163	119	178	203	196	2.0
23	127	171	45	134	131	140	139	138	172	198	199	195	217	209	200	200	192	229	231	192	179	231	280	310	194	3.3
24	***	***	***	***	***	***	***	***	317	241	197	205	209	319	320	352	101	85	70	121	143	161	161	130	134	1.1
25	138	153	128	150	141	124	202	115	73	274	242	222	246	343	32	28	114	124	155	145	16	37	255	262	142	1.1
26	263	278	262	243	214	172	120	56	15	315	335	355	235	235	131	88	101	51	61	37	65	109	323	248	32	0.3
27	282	319	243	231	253	124	98	62	54	349	41	198	354	315	295	50	239	33	174	169	174	146	356	104	297	0.2
28	282	***	***	299	176	143	261	286	315	270	204	202	295	217	135	131	32	315	143	278	4	144	222	203	235	0.7
29	110	146	225	249	256	302	289	292	298	294	323	342	332	336	333	343	343	5	41	43	359	283	259	268	331	1.8
30	257	274	265	256	252	240	270	316	287	321	335	319	333	323	334	348	351	18	37	71	116	132	309	238	339	1.2
31	30	119	159	270	298	74	140	***	11	351	346	353	3	339	8	339	3	329	76	127	158	178	163	180	28	0.7
VD	178	193	189	175	159	159	160	174	212	220	222	222	227	239	247	248	231	237	208	199	183	174	207	196	209	
VV	1.6	1.7	1.4	1.3	1.2	1.3	1.4	1.1	1.9	2.4	2.7	3.2	3.0	3.1	2.5	2.4	1.6	1.3	1.2	1.7	2.6	2.1	1.4	1.4		1.7

TOTAL NUMBER OF OBSERVATIONS = 717

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	168	160	190	198	203	205	204	195	190	206	217	213	220	229	217	206	206	265	204	7.5
2	149	216	214	180	173	193	186	199	222	220	212	218	215	218	222	218	229	233	231	232	230	225	205	197	219	4.6
3	195	201	202	161	142	205	188	197	209	215	215	215	201	209	208	211	222	210	200	195	210	215	204	203	206	5.6
4	195	172	148	142	164	178	171	169	204	213	216	189	193	205	203	201	197	232	241	226	208	237	349	110	199	5.9
5	290	285	190	297	122	155	133	211	226	229	214	227	221	246	266	233	315	286	287	303	***	***	***	***	244	4.8
6	141	225	188	189	198	203	173	66	320	349	45	318	339	293	208	201	206	207	202	189	208	128	125	143	186	1.1
7	151	156	198	124	144	207	135	105	220	279	343	192	128	226	320	67	226	210	186	189	207	195	179	172	188	2.2
8	178	210	235	289	0	338	287	309	352	113	159	199	165	302	323	292	58	62	104	302	260	126	153	200	197	0.8
9	190	202	172	141	137	170	41	92	240	281	265	264	230	221	249	292	292	333	340	349	66	125	***	273	260	1.9
10	68	50	116	133	96	110	262	76	67	53	330	323	335	311	324	318	338	325	321	325	299	167	259	45	337	1.2
11	133	157	307	289	358	258	207	327	13	60	315	315	331	342	214	216	69	70	74	241	209	119	143	153	191	0.2
12	131	110	150	315	164	69	122	72	353	338	313	318	295	282	336	307	293	239	280	229	233	204	211	169	280	0.9
13	148	126	121	184	***	346	128	116	113	102	98	80	119	194	303	61	112	86	111	125	145	159	8	246	116	2.2
14	133	109	136	139	187	128	113	99	285	237	217	217	218	255	278	284	265	260	228	215	254	196	204	301	227	2.1
15	258	39	220	104	170	90	134	134	212	207	213	208	220	232	227	233	228	224	222	221	210	208	207	210	215	6.4
16	210	215	211	212	211	209	199	206	210	212	220	225	220	222	228	226	231	213	211	201	204	204	293	180	213	9.2
17	169	181	179	184	192	178	202	212	203	211	210	208	222	212	226	241	242	225	230	230	213	267	224	297	211	7.3
18	61	161	231	197	148	59	154	228	219	222	247	228	257	237	237	294	208	210	323	195	172	225	63	287	225	2.1
19	301	349	210	197	352	***	193	107	43	27	331	321	3	18	315	351	57	346	327	79	121	134	271	8	4	0.9
20	122	110	156	221	0	279	282	249	350	345	334	339	315	89	34	357	53	66	55	76	119	129	343	230	46	1.0
21	247	143	142	139	129	112	127	106	222	209	194	154	322	356	354	320	316	235	144	162	156	139	193	140	159	2.1
22	135	181	148	162	114	114	145	193	189	222	189	205	219	205	220	256	261	311	321	348	151	112	164	208	196	2.3
23	183	243	212	156	140	137	140	144	176	201	200	198	219	211	201	203	193	230	230	198	188	234	285	309	199	4.0
24	***	***	***	***	***	***	***	***	319	244	201	205	212	320	326	351	103	95	78	116	140	159	166	139	133	1.4
25	151	163	161	148	144	135	217	127	86	274	241	225	249	345	36	30	121	130	158	154	22	40	273	279	150	1.1
26	286	291	281	264	242	200	155	75	30	320	343	0	239	239	136	100	107	58	65	45	70	109	332	266	27	0.3
27	298	329	275	258	302	109	96	69	61	356	51	204	357	322	304	51	239	31	142	158	143	129	32	80	359	0.5
28	298	***	270	345	134	143	245	253	316	287	205	207	297	243	140	126	40	318	131	265	351	240	253	250	245	0.9
29	135	80	49	245	264	306	313	302	304	301	330	345	338	341	340	347	347	11	48	47	8	312	280	286	343	2.3
30	275	294	309	281	282	274	281	321	292	330	340	328	339	328	339	352	357	21	42	72	109	127	193	262	346	1.6
31	240	115	125	111	230	30	147	270	20	351	352	356	6	341	11	346	7	336	81	125	150	181	220	202	39	0.6
VD	192	196	191	183	168	168	174	177	213	222	224	225	229	240	246	249	232	237	206	200	187	182	210	207	211	
VV	1.9	1.7	1.6	1.6	1.6	1.4	1.7	1.5	2.1	2.7	2.9	3.4	3.3	3.4	2.7	2.6	1.8	1.4	1.3	2.0	2.9	2.6	1.9	1.9		2.0

TOTAL NUMBER OF OBSERVATIONS = 722

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	14	11	13	13	11	13	12	12	14	11	11	10	7	6	5	9	(CM)	11	14
2	12	6	19	31	15	12	9	(CM)	18	14	19	13	13	12	18	14	15	13	9	6	5	3	(CM)	16	13	31
3	16	7	30	8	6	37	14	10	13	16	17	14	17	20	23	16	13	14	12	5	4	8	18	18	15	37
4	7	9	5	6	14	6	8	10	14	14	16	15	16	15	14	13	12	11	10	7	5	11	13	20	11	20
5	9	9	8	15	11	16	10	22	11	13	12	12	13	12	10	10	24	10	9	9	(PF)	(PF)	(PF)	(PF)	12	24
6	6	16	11	31	26	19	10	11	30	35	28	34	34	31	31	24	24	26	11	5	13	13	5	10	20	35
7	14	14	22	7	12	16	14	14	35	33	35	38	34	26	24	(CM)	27	13	10	5	4	5	29	13	19	38
8	9	24	15	12	26	13	9	23	14	22	26	25	28	14	17	18	11	9	8	14	9	10	16	12	16	28
9	19	17	8	7	8	10	10	22	28	16	14	14	12	13	14	15	12	11	9	6	21	7	20	11	14	28
10	10	13	9	19	17	8	(CM)	38	32	38	38	29	36	20	22	29	19	24	11	7	10	16	20	31	22	38
11	23	22	21	(CM)	21	(CM)	15	12	20	(CM)	39	19	31	31	17	13	21	10	9	11	21	7	13	12	18	39
12	6	7	9	10	11	12	9	20	19	27	25	33	35	22	23	18	18	30	16	9	19	6	32	(CM)	18	35
13	26	17	10	10	8	15	23	17	9	10	13	21	21	20	13	12	10	11	10	7	3	16	15	4	13	26
14	11	15	9	8	31	10	8	17	36	20	20	19	20	21	20	13	22	24	10	6	17	15	14	23	17	36
15	21	24	18	22	15	15	11	29	18	11	12	14	12	16	14	14	11	11	9	7	5	6	7	7	14	29
16	7	6	7	6	6	7	7	10	13	11	15	13	14	15	14	14	12	13	11	6	6	6	23	11	11	23
17	8	7	9	14	10	9	13	9	9	12	15	16	14	11	14	15	13	10	8	8	6	15	21	23	12	23
18	25	9	15	13	15	7	9	21	14	16	20	19	19	24	28	19	17	11	22	13	7	18	10	6	16	28
19	10	14	6	12	10	7	(CM)	32	36	27	43	22	35	30	34	18	16	15	10	9	3	13	8	5	18	43
20	13	12	20	21	17	11	11	27	23	41	22	31	19	25	21	26	29	14	7	6	6	9	12	19	18	41
21	15	18	9	11	8	9	10	18	21	20	28	31	34	24	27	19	26	14	19	8	8	9	16	15	17	34
22	10	9	11	9	10	7	8	14	14	28	25	25	19	19	22	20	23	24	9	8	7	9	15	23	15	28
23	15	31	30	31	6	7	10	11	14	13	14	20	20	19	19	20	18	13	10	7	5	16	11	11	15	31
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	17	21	33	38	34	21	9	14	13	7	6	11	8	5	12	7	16	38
25	4	8	7	7	6	5	16	14	28	33	16	31	49	10	9	12	10	8	9	11	14	14	6	7	14	49
26	7	9	7	5	16	11	16	12	17	17	17	31	14	27	11	10	21	8	10	8	12	17	7	6	13	31
27	9	(CM)	6	5	14	7	17	25	29	28	51	13	17	14	18	23	11	18	7	8	11	19	14	20	17	51
28	9	(PF)	15	17	7	6	12	6	11	36	24	13	10	9	14	11	26	11	10	7	8	10	5	11	13	36
29	10	10	8	13	(CM)	6	9	7	9	13	17	23	16	15	20	13	11	12	10	5	14	6	5	6	11	23
30	5	7	6	6	4	5	23	16	31	31	30	31	28	27	18	18	14	11	10	7	4	11	12	(CM)	15	31
31	16	7	6	14	12	11	(CM)	42	19	25	32	22	21	24	20	21	27	25	11	4	4	33	19	(CM)	19	42
AV	12	13	12	13	13	11	12	18	20	22	24	22	23	19	18	17	17	14	10	8	9	11	14	13	15	
PK	26	31	30	31	31	37	23	42	36	41	51	38	49	31	34	29	29	30	22	14	21	33	32	31		51

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	14	12	13	13	10	12	12	11	13	11	10	10	6	4	3	6	17	10	17
2	11	5	14	18	14	18	15	40	15	13	17	12	12	11	16	13	14	13	8	5	2	2	27	25	14	40
3	13	6	13	24	10	29	9	9	12	15	16	12	16	18	19	14	12	12	11	4	2	3	4	9	12	29
4	3	3	4	3	9	4	7	10	12	13	15	14	16	14	13	12	11	9	9	5	4	8	16	18	10	18
5	8	10	11	19	15	18	16	21	10	13	11	11	12	11	9	9	22	8	7	8	(PF)	(PF)	(PF)	(PF)	12	22
6	4	13	13	35	33	32	25	15	30	32	26	32	33	27	31	23	25	25	10	3	14	10	6	6	21	35
7	18	12	12	8	21	18	10	12	30	27	30	44	33	23	20	37	24	13	9	3	3	3	7	6	18	44
8	5	12	10	10	31	10	10	25	12	21	24	22	26	12	15	15	10	8	6	11	8	9	9	16	14	31
9	20	8	7	4	6	7	14	31	22	16	12	12	10	12	13	12	11	9	8	5	11	7	16	14	12	31
10	13	(CM)	5	15	13	9	(CM)	37	35	36	31	26	29	17	20	24	17	23	11	5	12	25	14	26	20	37
11	19	25	15	27	15	(CM)	17	11	20	31	38	19	27	30	14	12	20	9	8	9	16	6	19	10	18	38
12	4	5	13	6	14	12	12	21	17	21	18	31	27	20	23	17	16	22	16	7	15	9	23	22	16	31
13	27	26	11	13	12	25	35	11	8	8	11	19	19	18	11	11	8	9	9	4	2	10	18	6	14	35
14	8	16	8	6	23	9	9	17	33	20	17	18	18	20	21	12	18	22	9	4	18	16	23	11	16	33
15	19	26	27	27	14	15	11	25	18	9	12	13	9	14	13	13	9	9	7	5	4	4	6	5	13	27
16	4	3	4	4	4	4	6	9	11	10	13	11	13	14	13	14	10	12	9	5	5	5	25	11	9	25
17	7	6	7	12	9	8	11	8	8	11	14	15	12	9	13	13	12	9	7	6	4	13	20	20	11	20
18	18	8	25	11	8	7	9	37	12	13	19	19	18	20	22	17	14	9	26	18	4	16	11	7	15	37
19	15	29	9	(CM)	9	8	(CM)	35	37	22	40	21	34	28	33	17	15	13	9	8	3	26	10	8	20	40
20	9	34	18	9	17	15	18	26	28	39	18	25	18	21	24	25	28	12	5	5	4	11	13	19	18	39
21	9	(CM)	13	5	4	7	7	14	19	17	23	27	30	24	25	19	18	11	19	7	7	8	11	12	15	30
22	7	8	17	7	6	6	7	15	13	24	24	23	18	18	20	19	21	20	9	9	4	7	9	13	14	24
23	22	31	29	30	4	5	9	10	12	11	12	18	20	17	17	20	21	12	9	7	4	13	10	11	15	31
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	15	17	28	28	30	19	8	13	10	5	5	11	5	3	14	5	14	30
25	2	10	14	4	4	3	16	15	25	30	14	29	42	8	8	11	8	7	9	11	13	14	8	6	13	42
26	8	5	7	6	15	9	17	11	15	14	15	32	13	24	10	10	17	7	9	8	9	12	8	6	12	32
27	6	11	7	6	5	10	13	19	30	29	43	9	20	13	19	26	10	17	7	5	7	9	10	15	14	43
28	6	(PF)	(CM)	13	18	4	10	6	10	39	22	13	8	9	11	12	19	11	8	6	7	10	6	10	12	39
29	9	9	12	11	11	7	9	6	7	11	15	19	14	13	17	12	8	11	8	5	12	8	6	5	10	19
30	5	6	9	9	6	10	23	15	27	25	30	26	25	24	17	17	13	10	9	4	3	9	22	8	15	30
31	12	5	25	27	11	6	32	(CM)	21	25	28	19	19	22	18	19	24	26	10	3	2	22	23	22	18	32
AV	11	13	13	13	12	11	14	18	19	20	21	20	20	17	17	16	15	13	10	7	7	10	13	12	14	
PK	27	34	29	35	33	32	35	40	37	39	43	44	42	30	33	37	28	26	26	18	18	26	27	26		44

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	12	11	11	12	9	11	10	9	11	10	9	8	5	3	4	6	14	9	14
2	14	8	11	19	8	10	11	37	14	12	15	10	10	10	14	12	13	12	7	4	2	2	5	6	11	37
3	4	4	6	31	30	14	7	8	11	14	14	11	14	16	18	12	11	11	9	3	2	1	2	3	11	31
4	4	4	4	4	6	3	5	10	11	12	14	13	14	12	11	11	9	8	8	5	4	7	19	17	9	19
5	8	6	16	20	8	17	16	19	10	11	11	10	11	11	8	8	25	7	7	8	(PF)	(PF)	(PF)	(PF)	12	25
6	4	11	8	23	14	15	25	18	40	30	25	33	33	25	30	21	20	20	8	3	13	9	5	5	18	40
7	12	7	8	15	7	11	7	11	31	28	29	41	34	24	22	35	24	11	8	3	2	1	3	3	16	41
8	4	8	9	8	32	10	6	20	11	17	19	21	23	13	16	14	9	7	6	8	7	8	6	18	13	32
9	12	6	9	5	7	15	17	33	21	14	11	11	9	9	13	11	10	8	7	5	11	6	(CM)	25	12	33
10	26	11	5	8	12	19	22	35	32	30	31	21	27	16	19	21	14	20	10	4	12	13	13	22	18	35
11	14	25	14	34	14	11	15	12	18	36	35	18	23	29	13	12	22	8	7	9	13	6	15	8	17	36
12	9	5	11	12	7	6	6	25	21	19	15	30	32	19	22	16	16	17	13	6	12	8	22	21	15	32
13	24	16	8	7	(CM)	25	37	10	8	8	10	16	18	17	10	10	8	9	9	4	2	5	26	8	13	37
14	8	6	7	2	21	14	30	23	31	21	14	17	16	19	17	11	20	21	7	3	17	20	16	18	16	31
15	10	21	16	17	11	41	11	22	16	8	10	10	8	13	11	12	8	8	6	4	2	2	4	3	11	41
16	2	2	2	2	2	2	4	8	10	9	11	10	11	13	12	12	10	11	8	3	2	2	19	11	7	19
17	5	5	5	9	8	7	11	6	6	9	12	13	11	8	12	11	10	8	6	5	3	12	20	17	9	20
18	13	9	16	13	18	19	18	34	11	13	17	18	17	22	20	15	12	8	26	15	2	14	16	6	16	34
19	20	10	8	25	10	(CM)	23	28	39	20	40	18	32	25	32	15	15	12	7	7	3	11	8	12	18	40
20	9	25	6	15	15	14	7	21	30	43	15	24	19	22	20	19	29	11	5	5	5	9	23	16	17	43
21	25	15	19	4	5	5	6	13	16	15	20	23	24	23	20	16	16	11	19	6	6	8	11	9	14	25
22	6	8	22	5	4	7	7	14	14	21	22	19	16	16	19	16	19	19	8	13	5	6	8	8	13	22
23	23	26	30	29	4	4	7	9	11	9	10	17	18	15	15	18	19	11	7	5	3	12	9	9	13	30
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	15	13	30	24	30	17	7	14	11	4	5	5	3	3	16	7	13	30
25	2	9	13	4	5	6	20	10	24	32	11	29	35	8	6	12	8	7	8	10	12	11	12	6	13	35
26	5	4	6	7	10	8	11	12	16	11	14	32	11	22	8	9	14	6	8	8	8	10	7	5	11	32
27	5	7	6	6	6	9	12	16	27	28	41	9	16	12	15	21	10	25	14	6	11	6	11	9	14	41
28	5	(PF)	11	12	7	3	10	13	8	28	18	12	7	11	8	12	18	11	8	5	7	5	8	9	10	28
29	7	7	9	8	4	6	9	7	7	9	14	16	12	12	14	11	8	10	8	5	11	10	6	4	9	16
30	4	5	5	7	6	6	15	13	26	21	26	23	21	21	15	17	11	10	8	4	4	5	30	7	13	30
31	25	6	9	9	8	10	13	37	23	28	24	15	17	21	16	17	22	18	8	4	2	10	19	18	16	37
AV	11	10	10	12	10	11	13	18	18	19	19	18	19	16	15	15	15	12	9	6	6	8	13	11	13	
PK	26	26	30	34	32	41	37	37	40	43	41	41	35	29	32	35	29	25	26	15	17	20	30	25		43

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	16	18	19	21	21	23	23	22	24	22	23	22	19	15	14	14	12	19	24
2	11	11	11	8	8	9	12	17	21	22	22	23	23	24	25	25	25	24	23	21	17	16	14	13	18	25
3	13	14	13	11	11	12	17	21	23	24	26	26	27	28	28	28	28	27	26	23	19	17	16	14	20	28
4	16	16	16	14	13	13	18	21	22	23	24	26	26	27	27	27	26	23	23	20	18	16	15	15	20	27
5	14	13	13	13	11	12	13	17	19	21	21	20	22	22	19	18	16	14	10	8	(PF)	(PF)	(PF)	(PF)	16	22
6	4	3	2	2	2	3	6	9	13	16	17	19	19	22	22	21	21	21	19	17	13	12	12	11	13	22
7	10	9	9	9	8	9	12	17	20	23	23	24	23	24	23	26	26	24	23	20	17	16	16	16	18	26
8	16	17	16	15	14	14	14	17	17	19	21	21	23	18	14	16	17	18	17	14	11	10	10	10	16	23
9	9	10	11	9	9	9	11	14	17	17	18	20	20	21	22	22	23	22	21	19	16	14	13	11	16	23
10	11	11	10	9	8	8	11	15	18	22	23	24	26	26	26	27	26	26	24	22	19	18	16	16	18	27
11	16	14	13	14	11	12	14	17	19	23	26	27	28	28	24	19	22	23	20	18	18	16	14	14	19	28
12	13	13	12	11	11	11	14	19	23	26	28	29	29	29	31	29	28	29	28	24	20	19	18	17	21	31
13	16	16	13	13	14	13	17	19	22	24	28	29	30	29	26	23	24	25	24	21	19	18	14	13	20	30
14	13	13	13	14	13	15	18	22	26	28	29	31	31	31	29	28	29	30	27	23	20	19	18	16	22	31
15	15	15	16	14	14	15	18	22	25	27	28	28	28	30	30	30	29	28	27	23	20	20	20	21	23	30
16	20	18	17	18	17	17	20	22	24	25	27	28	28	29	29	29	29	28	26	23	21	21	18	19	23	29
17	19	19	18	18	18	18	19	19	20	24	26	26	27	27	28	29	28	26	25	23	21	21	21	21	23	29
18	19	17	16	15	14	14	17	21	24	26	28	30	30	29	32	29	27	27	26	24	22	20	19	18	23	32
19	17	17	16	15	13	13	16	19	24	27	28	29	30	31	31	29	28	30	28	24	21	19	18	16	22	31
20	18	16	15	14	13	14	14	18	24	28	29	29	28	30	30	31	32	30	28	25	22	21	18	17	23	32
21	17	16	17	18	18	18	21	24	28	30	32	33	31	32	33	32	32	29	27	23	22	21	21	20	25	33
22	19	18	18	19	18	18	20	23	26	29	31	32	33	33	33	33	31	31	27	26	23	23	22	21	25	33
23	19	19	19	19	18	18	21	23	27	28	29	31	31	32	32	33	32	31	29	26	24	23	22	21	25	33
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	24	27	30	30	31	30	28	22	16	18	18	17	17	17	17	15	( )	31
25	15	16	16	16	15	15	16	19	23	27	27	29	31	25	25	26	27	24	22	18	19	18	17	16	21	31
26	16	16	15	14	14	13	14	18	21	24	27	27	24	23	21	22	26	24	23	21	19	18	17	17	20	27
27	16	14	14	14	14	13	16	19	21	24	24	19	22	23	22	26	18	18	18	18	17	17	16	16	18	26
28	16	(PF)	14	14	13	14	14	14	16	19	23	24	14	13	16	17	17	15	14	14	13	13	13	13	16	24
29	13	13	13	13	13	13	13	13	13	16	18	20	22	23	24	24	24	23	22	20	18	17	16	15	17	24
30	14	13	12	12	11	11	12	15	18	20	22	24	25	26	26	26	26	24	23	21	18	17	16	14	19	26
31	13	13	14	12	12	11	14	18	22	26	27	28	28	29	29	30	29	29	28	23	21	19	17	17	21	30
AV	15	14	14	13	13	13	15	18	21	24	25	26	26	26	26	26	25	25	23	21	19	18	17	16	20	
PK	20	19	19	19	18	18	21	24	28	30	32	33	33	33	33	33	32	31	29	26	24	23	22	21		33
MN	4	3	2	2	2	3	6	9	13	16	17	19	14	13	14	16	16	14	10	8	11	10	10	10		

MONTHLY MINIMUM = 2

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	17	18	19	19	21	21	21	22	22	22	21	19	18	17	16	13	18	22
2	12	13	13	11	10	12	13	17	19	20	21	21	22	22	23	23	23	23	23	21	19	19	17	15	18	23
3	15	16	16	13	13	14	18	20	21	23	23	24	24	26	26	26	26	26	26	23	22	21	19	18	21	26
4	18	18	18	16	14	15	18	20	21	22	23	23	24	25	25	25	24	23	23	21	19	18	16	16	20	25
5	15	14	14	13	12	13	13	17	18	19	19	19	20	20	19	17	16	13	10	8	(PF)	(PF)	(PF)	(PF)	15	20
6	4	5	4	3	4	4	7	9	12	14	15	17	18	19	19	19	19	20	19	17	16	13	13	13	13	20
7	11	11	11	11	10	11	13	16	19	21	22	22	22	23	23	24	24	23	22	21	18	18	17	17	18	24
8	17	18	16	16	14	14	15	16	16	18	19	19	21	18	14	16	16	17	17	14	12	10	11	11	16	21
9	10	11	11	10	10	10	11	14	16	16	17	18	18	19	21	21	22	21	21	19	17	16	14	12	16	22
10	11	11	11	11	9	9	11	14	17	19	21	22	23	24	24	25	24	24	23	22	19	18	17	17	18	25
11	17	16	15	14	13	13	14	16	18	22	24	26	26	27	23	20	21	22	19	19	18	17	16	16	19	27
12	14	14	13	12	12	12	15	18	22	24	27	28	27	28	29	28	28	28	27	24	22	20	19	18	21	29
13	17	17	14	16	16	16	17	19	22	23	26	28	28	28	25	23	23	24	24	22	21	19	16	15	21	28
14	14	14	13	16	15	16	18	22	25	27	27	28	29	29	28	28	28	29	27	25	22	21	20	18	22	29
15	16	16	16	16	16	17	19	22	24	25	27	27	27	28	28	28	28	28	27	24	22	22	22	22	23	28
16	22	21	19	20	19	19	20	22	23	24	25	26	26	27	28	28	28	27	26	24	23	23	20	21	23	28
17	21	20	19	18	18	18	19	19	20	22	24	24	25	25	27	27	27	26	25	24	22	21	22	21	22	27
18	19	18	17	16	16	16	18	21	23	24	27	28	28	28	29	28	27	26	26	24	23	22	20	19	23	29
19	18	17	16	16	15	14	16	19	23	25	27	28	28	28	29	28	27	29	27	25	23	22	19	17	22	29
20	18	17	16	16	15	15	16	18	22	27	28	28	27	28	29	30	30	29	28	26	24	23	19	19	23	30
21	18	18	17	19	20	19	21	24	27	28	29	31	30	31	32	32	31	29	27	23	22	21	22	21	25	32
22	20	19	19	19	19	18	20	23	25	27	28	29	30	31	31	32	29	30	27	26	24	24	23	22	25	32
23	21	21	21	20	19	19	20	22	25	26	27	28	29	29	30	31	31	30	28	27	24	23	22	21	25	31
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	23	26	28	28	29	28	27	23	17	18	18	18	18	19	18	16	( )	29
25	17	17	17	17	16	16	17	19	22	25	26	27	28	24	25	26	26	24	23	19	20	19	18	17	21	28
26	17	16	16	15	14	14	15	18	20	23	25	26	23	22	21	21	24	23	22	21	19	18	18	17	19	26
27	16	16	15	15	15	14	16	18	19	22	22	19	21	22	22	24	19	18	18	18	18	18	17	16	18	24
28	16	(PF)	15	14	14	15	15	14	16	18	21	22	14	14	15	16	17	15	14	14	13	13	13	13	15	22
29	13	13	13	13	13	13	13	13	13	15	17	19	21	21	23	23	22	22	21	19	19	17	16	16	17	23
30	14	14	13	12	12	11	12	14	17	19	21	22	23	24	24	24	24	24	23	21	19	19	17	16	18	24
31	14	14	15	13	12	12	14	17	21	24	25	26	26	27	27	28	28	28	27	24	23	21	18	18	21	28
AV	16	16	15	15	14	14	16	18	20	22	24	24	24	25	25	25	24	24	23	21	20	19	18	17	20	
PK	22	21	21	20	20	19	21	24	27	28	29	31	30	31	32	32	31	30	28	27	24	24	23	22		32
MN	4	5	4	3	4	4	7	9	12	14	15	17	14	14	14	16	16	13	10	8	12	10	11	11		

MONTHLY MINIMUM = 3

TEMPERATURE ● 60M
DEGREE C

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	17	18	19	20	21	22	21	22	22	22	21	19	18	17	17	14	19	22
2	13	13	13	11	11	12	13	17	19	20	21	22	22	22	23	23	23	23	23	21	19	19	18	17	18	23
3	17	17	16	14	14	14	18	20	22	23	23	24	25	26	27	27	26	26	26	23	22	22	21	19	21	27
4	18	18	18	16	16	16	18	20	22	22	23	24	25	26	26	26	24	23	22	21	19	18	16	15	20	26
5	15	14	14	13	12	13	13	17	18	19	19	19	20	20	18	17	16	13	9	8	(PF)	(PF)	(PF)	(PF)	15	20
6	4	5	4	4	4	6	7	10	13	15	16	18	18	19	19	19	19	19	18	17	16	13	13	13	13	19
7	13	12	12	11	11	11	13	16	19	21	22	22	22	23	23	24	24	23	22	21	19	19	18	18	18	24
8	18	18	17	16	14	14	15	16	16	18	19	20	21	18	14	16	16	18	17	14	11	10	11	11	16	21
9	10	11	11	10	11	11	11	14	16	16	17	18	18	19	20	21	22	21	21	19	16	16	14	13	16	22
10	11	11	11	11	9	9	11	14	18	21	22	23	24	24	25	26	25	24	23	22	19	18	18	17	18	26
11	17	17	16	16	13	13	15	17	19	22	24	26	26	27	23	19	22	22	19	18	19	17	16	16	19	27
12	15	14	14	12	12	12	15	19	23	26	27	28	28	27	29	28	28	27	27	24	22	21	21	19	22	29
13	18	18	15	17	16	16	18	19	22	23	26	28	28	28	25	23	23	24	24	22	21	20	17	15	21	28
14	15	14	14	17	17	17	19	22	25	27	28	28	29	29	28	28	28	29	27	26	23	21	19	18	23	29
15	17	16	17	16	17	18	19	22	24	26	27	27	27	28	28	28	28	28	27	24	23	22	22	22	23	28
16	23	21	21	20	19	20	21	22	23	24	25	26	27	27	28	28	28	27	26	24	23	23	21	21	24	28
17	21	20	19	18	18	18	19	19	19	23	24	24	26	26	27	27	27	26	25	24	23	22	22	21	22	27
18	19	19	17	16	16	16	18	21	23	24	26	27	28	28	29	28	27	26	25	24	23	22	21	20	23	29
19	18	17	16	16	16	14	16	19	23	26	28	28	29	29	29	28	27	29	27	24	23	22	19	18	23	29
20	18	17	17	17	16	16	16	19	23	28	28	28	27	28	30	31	31	29	28	26	24	23	20	19	23	31
21	18	18	18	19	20	19	21	24	27	28	30	31	30	32	32	32	31	29	27	23	22	21	22	21	25	32
22	20	19	19	20	19	19	21	23	25	27	29	29	30	31	31	31	29	29	27	26	24	24	23	23	25	31
23	22	21	21	20	19	19	20	22	26	27	28	29	29	30	31	31	31	29	28	27	24	23	22	21	25	31
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	23	26	28	28	29	28	27	22	16	19	18	18	18	19	18	17	( )	29
25	18	18	17	17	17	17	17	19	23	25	25	27	28	24	26	26	26	24	22	19	19	18	17	17	21	28
26	17	16	15	15	14	14	16	18	21	23	26	26	23	22	20	21	24	23	22	20	19	18	17	17	19	26
27	16	15	15	15	14	14	15	18	21	23	23	19	22	22	22	25	18	18	18	18	18	18	17	16	18	25
28	16	(PF)	15	14	14	15	16	16	17	19	21	23	14	14	15	16	17	14	14	14	13	13	13	13	16	23
29	13	13	13	13	13	13	13	13	13	15	18	20	21	22	23	23	23	23	22	19	18	17	16	16	17	23
30	14	13	13	12	12	12	12	14	17	19	21	23	24	24	25	25	24	24	23	21	19	19	17	16	19	25
31	14	14	16	14	13	13	16	18	22	25	27	27	28	28	29	29	28	28	27	24	23	22	19	19	22	29
AV	16	16	15	15	14	14	16	18	21	23	24	25	25	25	25	25	24	24	23	21	20	19	18	17	20	
PK	23	21	21	20	20	20	21	24	27	28	30	31	30	32	32	32	31	29	28	27	24	24	23	23		32
MN	4	5	4	4	4	6	7	10	13	15	16	18	14	14	14	16	16	13	9	8	11	10	11	11		

MONTHLY MINIMUM = 4

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	61	-33	-56	-72	-94	-89	-100	-94	-78	-117	-83	-83	-56	6	178	200	200	156	-9	200
2	150	150	194	228	200	272	233	50	-100	-117	-128	-122	-111	-133	-161	-128	-128	-111	-72	-6	233	311	328	350	58	350
3	356	211	244	300	272	194	83	-28	-61	-111	-144	-133	-94	-156	-122	-111	-117	-83	-61	11	239	378	383	394	77	394
4	206	244	94	156	217	256	11	-44	-61	-100	-122	-100	-89	-133	-117	-111	-89	-72	-67	0	100	144	17	-17	13	256
5	-17	22	6	6	33	50	17	-28	-83	-133	-111	-94	-133	-161	-111	-106	-67	-117	-94	-67	(PF)	(PF)	(PF)	(PF)	-59	50
6	33	117	122	144	150	167	167	67	-17	-22	-11	-44	-83	-133	-194	-133	-100	-100	-72	-11	106	-44	39	-383	-10	167
7	122	194	217	133	206	144	106	-28	-61	-117	-67	-111	-83	-94	-78	-133	-144	-100	-56	6	139	206	222	106	30	222
8	83	28	50	44	-11	-17	-6	-44	-61	-100	-111	-100	-100	-83	-22	11	-22	-17	-17	-28	-56	-22	28	28	-23	83
9	17	83	22	28	50	67	28	-17	-106	-106	-78	-100	-100	-156	-156	-106	-89	-83	-61	-33	-39	44	67	78	-31	83
10	-156	-211	-200	-211	67	44	39	-22	-28	-44	-67	-56	-61	-78	-83	-89	-67	-83	-67	-17	22	-6	106	94	-49	106
11	117	183	200	111	67	44	83	6	-39	-67	-67	-50	-67	-56	-89	-28	33	-61	-50	-33	67	83	117	128	26	200
12	189	128	156	78	33	61	83	-11	22	-22	-56	-56	-78	-100	-72	-83	-72	-106	-89	-17	139	100	172	156	23	189
13	244	194	172	278	144	194	100	67	-50	-61	-117	-61	-111	-94	-78	-61	-50	-67	-33	28	183	156	172	122	53	278
14	100	106	133	239	261	167	167	6	-56	-94	-128	-128	-156	-178	-100	-78	-72	-100	-22	94	172	83	89	144	27	261
15	144	50	61	106	239	256	133	44	-67	-78	-94	-100	-94	-161	-150	-133	-111	-89	-50	44	217	194	161	150	28	256
16	167	228	239	189	189	233	22	-44	-61	-72	-111	-133	-122	-144	-144	-139	-117	-83	-44	28	144	189	128	33	24	239
17	39	50	50	0	-17	-11	-33	-44	-56	-72	-111	-111	-139	-133	-172	-172	-133	-67	-39	-6	139	89	28	-17	-39	139
18	-11	183	144	83	111	150	156	44	-78	-111	-194	-194	-172	-133	-189	-83	-78	-50	-50	-28	89	172	111	83	-2	183
19	67	-28	17	17	150	144	28	28	-22	6	-44	-83	-44	-67	-100	-56	-56	-72	-56	-22	150	222	100	100	16	222
20	-28	83	189	200	172	139	100	100	-6	-22	-61	-61	-61	-78	28	-28	-67	-44	-56	-22	117	150	144	139	43	200
21	94	144	78	161	172	150	56	-33	-89	-111	-94	-122	-61	-17	-22	-78	-61	-44	-39	-56	-39	-28	28	56	2	172
22	83	83	100	56	94	122	72	-39	-72	-122	-94	-139	-167	-144	-172	-167	-106	-100	-56	-39	44	50	100	200	-17	200
23	172	178	61	44	83	89	-6	-56	-67	-56	-78	-128	-161	-144	-111	-144	-100	-128	-61	-17	17	28	-11	-39	-26	178
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-22	-100	-144	-150	-150	-128	-100	-28	17	111	50	44	83	161	156	117	-5	161
25	189	156	78	144	161	133	100	17	-50	-94	-150	-167	-178	-6	33	-11	-39	-39	-50	39	6	-56	-11	17	9	189
26	22	0	-17	0	28	56	50	56	44	-22	-17	-67	-67	-83	-44	-50	-117	-50	-50	-67	-50	-17	-22	-28	-21	56
27	-39	0	6	-11	-28	0	-17	-44	-28	-28	-72	-28	0	-78	-67	-28	-17	44	28	56	83	83	44	-172	-13	83
28	-39	(PF)	22	-6	-22	-89	-22	-22	-267	-44	-133	-106	-139	-17	-39	-33	-33	-22	0	-22	0	11	39	33	-41	39
29	17	22	33	22	6	-11	-39	-33	-39	-17	-6	56	-11	-28	-56	-78	-89	-33	-17	-78	-72	-56	-44	-28	-24	56
30	-28	-17	33	17	28	22	-6	-17	-94	-17	-28	-61	-33	-72	-89	-44	-67	-39	-39	-22	17	139	78	22	-13	139
31	83	72	117	178	94	94	117	44	44	17	33	-22	61	-39	28	-83	-83	-72	-56	33	189	156	172	94	53	189
AV	82	95	90	94	109	108	63	-2	-54	-68	-87	-92	-94	-101	-91	-85	-75	-63	-45	-6	87	104	105	71	3	
PK	356	244	244	300	272	272	233	100	44	17	33	56	61	-6	33	11	33	111	50	94	239	378	383	394		394
MN	-156	-211	-200	-211	-28	-89	-39	-56	-267	-133	-194	-194	-178	-178	-194	-172	-144	-128	-94	-78	-72	-56	-44	-383		

MONTHLY MINIMUM = -383

TEMPERATURE @10M
DEGREE C

CB TRACT
MRI AD20
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	9	11	16	19	20	20	21	22	22	23	23	23	23	23	21	15	11	10	9	18	23
2	7	6	5	4	4	5	9	15	20	21	22	22	23	24	24	24	25	25	24	20	14	12	10	8	16	25
3	8	8	7	7	8	7	12	19	23	24	24	25	26	26	27	27	27	27	27	22	16	13	11	10	18	27
4	9	8	9	8	7	7	11	18	23	23	24	25	26	26	27	27	26	25	24	22	17	15	14	16	18	27
5	15	13	12	11	12	12	12	17	20	20	21	21	21	21	19	17	16	15	12	(IM)	(IM)	(IM)	(IM)	(IM)	16	21
6	(IM)	2	2	1	1	2	5	10	14	15	16	17	18	19	21	21	21	21	20	18	13	10	8	7	12	21
7	6	5	4	4	3	4	8	14	20	21	23	23	24	24	24	24	24	25	24	21	16	12	12	12	16	25
8	12	13	13	12	11	12	13	16	17	19	21	21	22	19	15	15	16	17	17	15	14	12	11	10	15	22
9	10	10	9	8	9	8	11	15	17	17	18	19	20	20	21	22	22	22	22	19	14	12	10	8	15	22
10	7	6	6	5	4	4	8	13	18	20	21	22	23	24	25	25	25	25	24	20	16	16	15	14	16	25
11	13	12	11	11	9	8	12	16	19	22	24	25	26	27	25	22	23	23	21	20	17	15	13	11	18	27
12	10	9	8	7	7	7	12	16	19	24	26	28	28	28	29	29	29	28	28	24	19	16	14	13	19	29
13	12	11	10	10	10	11	14	17	21	23	26	28	28	28	25	23	23	24	24	20	16	14	12	10	18	28
14	9	9	8	8	8	9	13	20	23	27	28	29	29	29	28	29	30	30	28	22	18	15	13	12	20	30
15	10	9	8	8	9	9	13	22	25	27	28	27	28	29	29	30	30	29	28	25	19	16	14	14	20	30
16	13	12	12	11	10	12	17	24	25	26	26	27	28	28	29	29	29	29	27	24	19	18	15	16	21	29
17	21	21	19	18	19	19	20	20	22	24	25	25	26	27	28	28	28	27	26	25	21	20	20	19	23	28
18	19	16	13	10	9	10	14	19	25	26	27	28	28	29	29	28	28	28	27	25	21	18	16	14	21	29
19	13	11	10	9	9	9	12	17	23	25	27	27	29	29	29	28	30	29	28	24	19	16	13	12	20	30
20	11	10	9	9	9	9	10	16	22	26	27	29	29	28	30	31	31	30	29	24	20	18	15	14	20	31
21	13	11	10	10	10	11	14	18	23	29	30	31	30	32	32	32	32	31	27	25	24	23	22	21	23	32
22	20	16	16	17	16	16	19	25	27	28	29	30	31	31	31	30	31	29	27	24	22	19	18	17	24	31
23	16	16	16	15	14	15	18	22	26	27	28	29	30	31	31	31	31	31	30	27	25	22	20	18	24	31
24	16	15	14	13	12	14	15	19	24	26	28	28	29	28	28	25	19	19	19	17	15	15	14	13	19	29
25	13	12	11	12	12	13	14	18	23	25	27	28	27	22	23	27	27	25	23	21	20	18	17	15	20	28
26	15	15	14	13	12	12	14	18	21	23	26	26	25	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	26
27	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
28	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AV	12	11	10	10	9	10	13	18	22	23	25	26	26	26	26	26	26	25	24	22	18	16	14	13	19	
PK	21	21	19	18	19	19	20	25	27	29	30	31	31	32	32	32	32	31	30	27	25	23	22	21		32
MN	6	2	2	1	1	2	5	10	14	15	16	17	18	19	15	15	16	15	12	15	13	10	8	7		

MONTHLY MINIMUM = 1

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	91	90	90	90	90	90	90	83	54	40	31	24	20	14	12	12	10	10	10	11	11	17	19	18	43	91
2	23	26	28	28	29	33	42	40	28	17	13	13	12	10	9	8	8	8	8	8	8	17	17	17	19	42
3	18	18	18	18	19	21	23	23	20	15	13	10	10	9	9	8	8	8	8	8	8	8	15	17	14	23
4	19	19	18	17	17	17	17	20	20	16	13	12	11	10	9	9	8	8	7	7	7	8	8	9	13	20
5	11	14	25	28	29	34	36	40	45	44	25	20	19	17	14	14	14	18	32	35	68	85	94	95	36	95
6	97	97	97	97	97	97	97	97	97	78	46	26	24	22	19	17	15	15	15	15	15	19	28	35	53	97
7	35	35	38	37	37	36	36	37	38	30	18	12	10	9	9	9	9	9	9	9	9	10	17	20	22	38
8	24	23	23	22	25	29	33	37	43	43	42	40	36	36	37	47	73	60	69	58	55	62	91	92	46	92
9	92	92	92	92	92	90	90	90	90	90	70	49	55	48	30	30	28	27	22	15	12	13	16	23	56	92
10	35	44	50	57	61	62	68	69	69	65	46	34	24	20	13	13	12	12	11	8	8	8	10	14	34	69
11	22	27	28	31	33	37	46	50	53	52	43	34	28	22	16	12	12	11	24	34	29	30	32	33	31	53
12	36	41	45	49	51	54	60	63	65	65	58	46	35	18	14	14	14	13	12	12	13	13	16	27	35	65
13	30	30	33	36	37	47	47	47	50	48	46	36	29	24	19	18	16	18	22	24	24	24	25	31	32	50
14	34	46	56	59	61	64	61	61	55	48	34	22	19	16	13	12	11	11	11	11	11	11	13	15	31	64
15	15	16	16	17	22	26	28	28	27	27	21	15	14	13	13	12	11	10	9	9	7	7	7	9	16	28
16	9	9	9	9	10	12	12	12	12	12	12	12	11	11	10	9	9	9	9	9	9	9	10	12	10	12
17	14	17	20	31	33	36	44	44	48	48	47	47	37	33	31	24	23	20	15	14	14	16	17	22	29	48
18	26	24	24	30	40	40	40	44	51	51	43	35	31	24	15	15	14	14	12	12	14	16	16	18	27	51
19	24	25	26	29	29	31	35	37	43	44	44	32	22	19	14	12	11	11	11	11	11	11	11	14	23	44
20	20	25	28	29	30	33	34	35	37	38	41	31	25	20	19	18	19	18	16	15	15	15	16	21	25	41
21	25	30	36	40	42	42	44	45	44	44	36	29	25	23	20	15	15	15	13	13	13	15	26	30	28	45
22	35	36	36	38	41	44	46	46	47	48	44	39	32	27	24	20	18	17	16	17	17	23	27	31	32	48
23	33	35	38	38	41	42	45	51	55	55	48	40	34	31	30	27	24	21	20	19	19	20	22	28	34	55
24	31	34	40	47	54	59	68	71	74	73	62	50	41	32	29	27	25	24	24	91	80	80	78	83	53	91
25	67	64	75	73	71	70	70	73	76	80	66	50	37	28	23	19	19	33	31	26	26	29	64	70	52	80
26	75	73	82	85	86	87	88	94	94	69	61	46	37	29	35	43	50	55	41	47	46	51	57	63	62	94
27	68	75	82	85	87	88	88	92	92	74	63	52	43	80	53	47	51	38	87	92	88	84	93	93	75	93
28	95	95	95	95	95	95	95	95	95	95	95	84	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	95
29	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	96	96	86	74	61	56	48	40	38	35	33	35	53	58	71	81	81	( )	96
30	85	87	92	92	93	93	81	63	56	49	44	32	24	23	21	19	19	17	18	22	31	37	45	53	50	93
31	57	62	64	69	71	71	67	51	39	24	19	15	11	11	10	10	9	9	9	12	19	21	27	29	33	71
AV	42	44	47	49	51	53	54	56	55	51	43	34	27	24	20	19	20	19	21	24	25	28	33	37	35	
PK	97	97	97	97	97	97	97	97	97	95	95	84	56	80	53	47	73	60	87	92	88	85	94	95		97
MN	9	9	9	9	10	12	12	12	12	12	12	10	10	9	9	8	8	8	7	7	7	7	7	9		

MONTHLY MINIMUM = 7

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	35	51	61	64	62	81	63	41	58	23	26	10	2	0	0	0	0	588	81
2	0	0	1	1	1	4	11	35	51	64	74	80	82	77	70	58	43	28	12	1	0	0	0	0	692	82
3	1	1	0	1	1	4	11	37	52	64	74	80	82	77	69	58	43	28	11	1	0	0	0	0	694	82
4	1	0	0	0	1	4	11	37	52	65	74	80	81	77	70	57	41	17	13	1	0	0	1	1	681	81
5	0	1	1	1	1	5	14	32	35	52	55	33	61	49	27	20	20	5	2	1	(PF)	(PF)	(PF)	(PF)	415	61
6	1	1	1	1	1	4	11	37	53	63	74	69	67	79	45	48	25	26	10	2	0	0	1	0	616	79
7	1	1	1	1	1	4	11	31	40	61	52	54	46	35	23	52	28	28	11	2	0	1	1	1	483	61
8	1	1	1	1	1	2	10	23	20	48	44	32	48	8	8	18	20	22	4	1	1	1	1	1	314	48
9	1	1	1	1	1	3	13	36	33	25	47	60	65	65	62	45	45	21	12	2	0	0	1	1	536	65
10	1	1	1	1	1	4	11	48	55	62	72	79	80	78	71	58	43	27	11	1	0	1	1	1	703	80
11	1	1	1	1	1	4	11	31	40	47	58	74	64	57	15	14	40	23	8	1	1	0	1	1	490	74
12	1	1	1	1	1	4	11	35	48	61	71	79	47	52	61	33	24	23	11	1	0	1	1	1	568	79
13	1	1	1	1	1	2	5	14	21	38	70	74	55	38	13	22	27	20	10	1	1	1	1	1	418	74
14	1	1	1	1	1	3	13	34	48	61	72	79	81	62	26	25	29	26	5	1	0	1	1	1	570	81
15	1	1	1	1	1	4	10	34	34	59	70	63	74	76	70	57	43	27	11	1	0	1	1	1	638	76
16	1	1	1	1	1	3	14	35	50	64	73	79	82	77	68	49	43	24	8	1	1	1	0	1	674	82
17	1	1	1	1	1	4	7	12	17	63	74	65	70	77	70	53	34	16	6	1	1	1	1	1	575	77
18	1	1	1	1	1	3	13	29	47	62	73	79	68	60	73	26	16	11	4	1	0	1	1	1	569	79
19	1	1	1	1	1	3	14	34	48	61	71	77	76	59	64	34	20	29	10	1	0	1	1	1	605	77
20	1	1	1	1	1	4	9	33	47	60	54	56	35	32	61	46	38	20	8	1	0	1	1	1	509	61
21	1	1	1	1	1	3	14	33	47	61	70	61	31	49	59	33	28	6	4	1	1	1	1	1	505	70
22	1	1	1	1	1	2	11	27	41	60	68	73	74	76	59	58	26	25	6	1	0	1	1	1	614	76
23	1	1	1	1	1	2	13	33	50	58	72	77	60	73	63	56	39	26	9	1	0	1	1	0	637	77
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	32	61	70	56	47	35	25	5	5	11	5	1	1	1	1	1	356	70
25	1	1	1	1	1	3	9	32	47	57	57	71	74	21	26	18	18	9	4	1	1	1	1	1	453	74
26	1	1	1	1	1	2	13	30	38	32	72	37	13	16	8	26	35	13	7	1	1	1	1	1	347	72
27	1	1	1	1	1	2	16	34	46	61	31	14	55	26	35	37	7	14	3	1	1	1	1	1	386	61
28	1	(PF)	1	1	1	2	4	11	21	36	44	62	3	5	14	14	17	4	8	1	1	1	1	1	252	62
29	1	1	1	1	1	1	4	6	12	37	36	69	68	60	56	48	33	27	8	1	1	1	1	1	474	69
30	1	1	1	1	1	3	15	33	46	59	70	74	77	71	59	56	40	24	9	1	1	1	1	1	642	77
31	1	1	1	1	1	2	15	32	47	95	73	78	79	68	66	54	39	23	8	1	1	0	1	1	685	95
TL	17	16	17	17	18	90	333	912	1270	1756	1979	2028	1924	1701	1479	1238	933	628	247	34	8	13	16	16	16688	
PK	1	1	1	1	1	5	16	48	55	95	74	80	82	79	73	58	45	29	13	2	1	1	1	1		95

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AH23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	793	793	792	792	792	792	792	792	791	791	791	791	791	791	792	793	792	793	792	793
2	793	793	793	793	794	794	795	795	795	795	795	795	795	795	794	794	794	794	794	794	794	795	795	795	794	795
3	794	794	794	795	795	795	795	795	796	795	795	795	795	794	794	793	793	792	792	792	792	792	792	792	794	796
4	792	792	792	792	792	792	791	792	792	791	791	790	790	789	789	788	788	788	788	788	789	789	789	789	790	792
5	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	790	790	791	792	(PF)	(PF)	(PF)	(PF)	789	792
6	794	794	794	794	795	795	795	796	796	796	796	796	795	795	795	795	794	794	794	795	795	796	796	796	795	796
7	795	795	795	795	795	795	796	796	796	796	795	795	795	795	794	794	793	793	793	793	793	794	794	794	795	796
8	794	793	794	794	794	795	795	795	796	795	795	795	795	794	794	794	794	794	793	794	795	795	795	795	794	796
9	795	795	795	794	794	795	795	795	795	795	795	795	795	795	795	795	795	794	795	795	795	796	796	796	795	796
10	797	796	796	796	797	797	797	798	798	797	797	797	797	796	796	796	796	795	795	795	796	796	796	796	796	798
11	796	796	796	796	796	796	797	797	798	797	797	797	797	796	796	796	796	796	796	797	796	796	796	796	796	798
12	796	796	796	796	797	797	797	797	797	797	797	797	796	796	796	795	795	795	795	795	795	796	795	795	796	797
13	795	795	795	795	795	796	796	796	796	796	796	796	795	794	794	794	794	794	793	793	793	793	794	793	795	796
14	793	793	793	792	793	793	793	793	793	793	793	793	792	792	792	792	791	791	791	791	791	791	791	791	792	793
15	791	791	791	791	791	791	791	791	791	791	791	792	792	791	791	790	790	790	790	790	790	790	790	790	791	792
16	790	791	791	791	791	792	792	792	793	793	793	793	792	792	792	791	791	791	791	791	791	791	792	792	792	793
17	792	792	792	793	793	793	793	793	794	794	794	793	793	793	792	792	792	792	792	792	792	793	793	794	793	794
18	794	793	793	793	794	794	794	794	795	795	795	794	794	794	793	793	793	793	793	793	794	794	794	795	794	795
19	795	795	795	795	795	795	796	796	796	796	796	796	795	795	794	794	794	793	793	794	794	795	795	795	795	796
20	795	795	795	795	795	796	796	796	797	796	796	796	796	796	795	795	795	794	794	795	795	795	796	796	795	797
21	796	796	796	796	796	797	797	798	798	798	798	798	797	798	797	793	792	792	793	794	795	795	795	794	796	798
22	796	795	795	795	795	796	796	798	799	800	799	799	798	795	793	792	792	792	793	793	794	794	794	795	795	800
23	795	795	795	796	796	795	796	797	795	795	794	793	793	793	792	791	791	791	791	792	792	794	794	795	794	797
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	795	795	794	792	792	791	791	791	793	793	793	794	794	794	794	794	793	795
25	795	795	795	794	795	794	795	796	795	795	794	794	792	792	792	792	792	792	792	793	795	796	795	797	794	797
26	796	795	795	796	796	797	797	795	796	796	796	794	793	794	795	793	794	793	793	794	796	795	795	796	795	797
27	796	796	796	796	797	797	797	797	796	795	795	795	795	794	794	794	794	794	795	795	796	795	795	795	795	797
28	796	(PF)	793	794	795	796	796	795	794	795	794	795	795	795	794	795	795	795	794	795	795	795	795	795	795	796
29	796	795	795	794	795	795	795	794	794	795	795	794	793	792	792	792	792	792	792	793	794	795	795	795	794	796
30	796	795	795	795	796	795	796	796	796	796	795	795	794	794	793	793	793	793	793	794	795	795	796	796	795	796
31	797	796	796	796	796	797	797	797	797	796	795	795	794	794	794	793	793	793	793	793	793	794	794	794	795	797
AV	794	794	794	794	795	795	795	795	795	795	795	795	794	794	793	793	793	793	793	793	794	794	794	794	794	
PK	797	796	796	796	797	797	797	798	799	800	799	799	798	798	797	796	796	796	796	797	796	796	796	797		800
MN	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	788	788	788	788	788	789	789	789	789		

MONTHLY MINIMUM = 788

(10[illegible]5/82-RPI)

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1																		(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	
2	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	( )
3	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	( )
4	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	( )
5	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)													10	5			15	10
6																									( )	
7																									( )	
8															10	5						23	3		41	23
9															3										3	3
10																									( )	
11																									( )	
12																									( )	
13																									( )	
14																									( )	
15																									( )	
16																									( )	
17																									( )	
18																									( )	
19																									( )	
20																									( )	
21																									( )	
22																									( )	
23				3							3														5	3
24																	25								25	25
25																				5					5	5
26							3	3																	5	3
27													(TR)				10	10							20	10
28													38	76	5			23							142	76
29																									( )	
30																									( )	
31																									( )	
TL	( )	( )	( )	3	( )	( )	3	3	( )	( )	3	( )	38	76	18	5	36	33	( )	5	10	28	3	( )	( )	
PK				3			3	3			3		38	76	10	5	25	23		5	10	23	3			76

PRECIPITATION
CM*100

CB TRACT
MRI AD20
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1							5																		5
2																					(TR)	(TR)			
3																									
4																									
5																				3		15		(TR)	18
6								(TR)																	
7																									
8															38	13						13	3		66
9							3	(TR)			5														8
10																									
11																									
12																								(TR)	
13																									
14																									
15																									
16																									
17																									
18						3																			3
19																									
20																									
21																									
22																									
23																									
24																	36	3							38
25						(TR)	(TR)							58								(TR)			58
26									( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
27	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
28	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
TL						3	8				5			58	38	13	36	3		3		28	3		( )

PRECIPITATION
CM*100

CB TRACT
MRI AD28
JULY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																						(TR)	(TR)	(TR)	
2	(TR)			3		(TR)															(TR)				3
3																						(TR)	(TR)		
4																						(TR)		(TR)	
5					3	(TR)															3		20		25
6	(TR)						(TR)																(TR)		
7																						(TR)			
8																48							28		76
9																								(TR)	
10				(TR)	(TR)	(TR)																			
11																			3					(TR)	3
12					(TR)	(TR)	(TR)																		
13																									
14																									
15																									
16					(TR)	(TR)	(TR)																	(TR)	
17																									
18																							(TR)	(TR)	
19				(TR)	(TR)																				
20																									
21																									
22																									
23																									
24																	13	13							25
25															43	3			5	5					56
26						(TR)	(TR)																		
27																36	3								38
28														51	13				23						86
29																							(TR)	(TR)	
30																						(TR)	(TR)	(TR)	
31																									
TL				3	3									51	56	86	15	13	30	5	3		48		312

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
JULY 1982
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	( )	( )	( )	( )	( )	E	D	D	D	D	D	D	D	D	D	C	C	D	E	F	E	E	( )	( )
2	F	F	F	F	F	F	F	( )	B	B	B	C	D	D	C	C	B	B	D	E	F	F	( )	F	D
3	F	F	F	F	F	F	F	D	D	B	B	B	B	B	B	B	B	C	D	E	E	F	F	F	D
4	E	F	E	E	F	F	E	D	D	B	B	C	D	D	D	D	D	D	D	E	E	F	E	E	D
5	E	E	E	E	E	E	E	D	C	C	D	D	D	D	D	C	D	C	B	D	( )	( )	( )	( )	D
6	E	F	F	F	F	F	F	E	E	E	E	D	C	A	A	A	A	A	D	E	F	D	E	A	D
7	F	F	F	F	F	F	F	D	D	A	D	A	C	B	C	( )	A	B	D	E	F	F	F	F	D
8	F	E	E	E	E	E	E	D	D	A	B	B	B	C	E	E	E	E	E	D	D	E	E	E	D
9	E	F	E	E	E	E	E	E	B	B	C	B	B	C	B	B	B	C	D	D	D	E	E	F	D
10	A	A	A	A	E	E	( )	E	D	D	D	D	D	C	C	B	D	C	D	E	E	E	F	F	D
11	F	F	F	( )	E	( )	F	E	D	( )	D	D	D	D	B	D	E	D	D	D	E	F	F	F	E
12	F	F	F	F	E	E	F	E	E	E	D	D	C	B	D	C	D	A	B	E	F	F	F	( )	E
13	F	F	F	F	F	F	F	E	D	D	B	D	A	B	C	D	D	D	D	E	E	F	F	F	E
14	F	F	F	F	F	F	F	E	D	B	B	B	B	B	B	C	D	A	E	F	F	F	F	F	D
15	F	E	E	F	F	F	F	E	D	D	D	D	D	C	D	D	D	D	D	E	E	E	E	D	E
16	D	E	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	C	D	E	E	E	F	D	D
17	D	D	E	E	E	E	D	D	D	D	C	C	D	D	D	D	C	D	D	E	F	F	E	E	D
18	E	F	F	F	F	F	F	E	C	B	B	B	B	A	B	C	C	D	D	D	F	F	F	F	D
19	E	D	E	E	F	F	( )	E	E	E	D	C	D	D	A	D	D	D	D	E	F	F	F	F	E
20	D	F	F	F	F	F	F	F	E	E	D	D	D	C	E	D	D	D	D	E	F	F	F	F	E
21	F	F	F	F	F	F	E	D	B	B	B	B	D	E	E	C	D	D	D	D	D	D	E	E	D
22	F	F	F	E	F	F	E	D	D	B	B	B	B	B	B	B	B	B	D	D	E	E	F	F	D
23	F	F	E	E	F	F	E	D	D	D	C	B	B	B	B	B	B	B	D	E	E	E	E	D	D
24	( )	( )	( )	( )	( )	( )	( )	( )	E	B	A	A	A	B	B	D	E	E	E	E	F	E	F	F	( )
25	F	F	F	F	F	F	F	E	D	B	B	B	A	E	E	E	D	D	D	E	E	D	E	E	E
26	E	E	E	E	E	E	E	E	E	E	E	D	D	C	D	D	A	D	D	D	D	E	E	D	D
27	D	( )	E	E	D	E	E	D	D	D	D	D	E	C	D	D	E	E	E	E	F	F	E	A	D
28	D	( )	E	E	E	B	E	E	A	D	B	B	A	E	D	D	D	E	E	E	E	E	E	E	D
29	E	E	E	E	( )	E	D	D	D	E	E	E	E	D	D	C	B	D	E	C	D	D	D	D	D
30	D	E	E	E	E	E	E	E	B	E	D	D	D	D	B	D	D	D	D	E	E	F	F	( )	D
31	F	E	F	F	F	F	( )	E	E	E	E	E	E	D	E	C	C	D	D	E	E	F	F	( )	E
AVE	E	E	E	E	F	E	E	E	D	C	C	C	C	C	C	C	C	C	D	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 27 B= 77 C= 43 D=202 E=203 F=158 HOURS MISSING= 34

(10/05/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

CONCENTRATION MAX UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	WIND DIRECTION S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	1	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	21	13	26	21	22	30	48	43	60	137	105	34	31	27	44	42	15 :	719
TOTAL :	21	13	26	21	22	30	48	43	60	137	105	34	31	27	44	42	15	719
MEAN CONC.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	1	1	3	3	3	3	3	3	3	1	3	1	1	3	1	1	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	21	13	26	21	22	30	48	43	60	137	105	34	31	27	44	42	15 :	719
TOTAL :	21	13	26	21	22	30	48	43	60	137	105	34	31	27	44	42	15	719
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	3	3	5	7	5	5	5	5	9	5	3	5	5	3	5	3	3	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	1	3	1	1	5	3	4	5	0	2	1	0	3	0	0 :	29
LT 5. :	21	13	25	18	21	29	43	40	56	132	105	32	30	27	41	42	15 :	690
TOTAL :	21	13	26	21	22	30	48	43	60	137	105	34	31	27	44	42	15	719
MEAN CONC.	1	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (03) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

	WIND DIRECTION																	
CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	101	101	99	101	88	90	86	92	103	107	105	109	107	99	103	105	86	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	1	2	0	1	0	0	0	0	1	3	3	1	3	0	3	3	0 :	21
90. - 100. :	4	1	7	3	0	2	0	1	3	13	18	6	3	6	12	8	0 :	87
80. - 90. :	10	3	5	5	5	9	14	6	14	37	40	8	2	3	11	13	2 :	187
70. - 80. :	2	1	7	6	4	3	13	8	22	49	18	2	5	7	5	8	4 :	164
60. - 70. :	4	3	3	1	6	13	12	13	13	24	12	4	6	2	7	9	5 :	137
50. - 60. :	1	2	3	1	6	2	3	6	5	7	6	6	8	3	3	0	1 :	63
40. - 50. :	0	1	1	1	1	1	2	3	2	1	4	2	1	1	1	0	2 :	24
30. - 40. :	0	0	0	2	0	0	1	3	0	1	1	4	1	2	1	1	0 :	17
20. - 30. :	0	0	0	1	0	0	3	3	1	2	5	0	2	2	0	0	0 :	19
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1 :	4
TOTAL :	22	13	26	21	22	30	48	43	61	137	107	34	31	27	44	42	15	723
MEAN CONC.	81	74	77	72	68	72	68	62	72	75	76	68	67	68	79	80	64	73

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

CONCENTRATION	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	9	2	7	3	1	5	3	8	14	23	20	7	5	4	11	10	4 :	136
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	13	11	19	18	21	25	45	34	46	114	87	27	26	23	33	32	11 :	585
TOTAL :	22	13	26	21	22	30	48	42	60	137	107	34	31	27	44	42	15	721
MEAN CONC.	47	17	30	16	5	19	7	21	26	19	21	23	18	17	28	27	30	21

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	5	5	5	5	5	5	5	5	7	10	7	5	5	5	7	5	5	
GT 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
12. - 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
9. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8. :	0	0	0	0	0	0	0	0	2	6	3	0	0	0	2	0	0 :	13
6. - 7. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6. :	6	1	4	6	7	10	9	9	19	55	41	7	9	8	18	15	8 :	232
4. - 5. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	11	7	15	8	7	13	20	18	26	46	32	12	12	13	13	20	5 :	278
1. - 2. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1. :	4	5	7	7	8	7	19	16	13	29	29	15	10	6	11	7	2 :	195
TOTAL :	21	13	26	21	22	30	48	43	60	137	105	34	31	27	44	42	15	719
MEAN CONC.	2	1	2	2	2	2	2	2	3	3	3	2	2	2	3	3	3	2

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 7/31/82)

CONCENTRATION		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM		TOTAL
MAX UG/M**3		2	2	5	4	5	4	4	8	5	6	8	8	4	2	5	2	5		
GT 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
12. - 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
11. - 12.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
10. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
9. - 10.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
8. - 9.	:	0	0	0	0	0	0	0	1	0	0	3	1	0	0	0	0	0	:	5
7. - 8.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
6. - 7.	:	0	0	0	0	0	0	0	0	0	15	2	0	0	0	0	0	0	:	17
5. - 6.	:	0	0	1	0	1	0	0	0	4	13	8	0	0	0	1	0	1	:	29
4. - 5.	:	0	0	2	1	2	1	1	5	7	12	10	1	1	0	2	0	2	:	47
3. - 4.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
2. - 3.	:	2	1	3	1	3	4	2	9	8	13	15	2	7	5	4	4	1	:	84
1. - 2.	:	1	1	2	4	5	7	5	7	9	12	17	7	7	4	9	13	0	:	110
LT 1.	:	18	11	18	15	11	18	40	21	31	72	50	23	16	18	28	25	11	:	426
TOTAL	:	21	13	26	21	22	30	48	43	59	137	105	34	31	27	44	42	15		718
MEAN CONC.		0	0	0	0	1	0	0	1	1	2	1	0	1	0	0	0	1		1

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(7/01/82 TO 7/31/82)

	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	3	4	3	4	4	3	4	7	7	8	7	6	6	4	4	4	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
5. - 8. :	0	0	0	0	0	0	0	2	6	32	30	2	2	0	0	0	0 :	74
3. - 5. :	5	1	4	4	4	5	6	8	12	43	24	7	3	4	6	7	0 :	143
1. - 3. :	12	6	12	11	12	17	33	20	23	37	35	12	17	16	29	22	0 :	314
LT 1. :	5	6	10	6	6	8	9	13	21	25	18	13	9	7	9	13	0 :	178
TOTAL :	22	13	26	21	22	30	48	43	62	138	107	34	31	27	44	42	0	710
PERCENT	3.	2.	4.	3.	3.	4.	7.	6.	9.	19.	15.	5.	4.	4.	6.	6.	0.	100.

0 = NO OBSERVATIONS

(10/05/82-RPI)

```
                         FREQUENCY TABLE OF WIND SPEED BY DIRECTION

    30 METER LEVEL                                                          CATHEDRAL BLUFFS SHALE OIL

                          STATION AA23   PERIOD( 7/01/82 TO  7/31/82)

                                                WIND DIRECTION
               N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  VAR  TOTAL
WIND SPEED
   MAX         4    4    4    5    6    4    7    9    9   10    9    9    8    5    6    5    0
METERS/SEC

          ...........................................................................................

 GT   11. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :    0

 8. - 11. :    0    0    0    0    0    0    0    2    6   28   23    2    1    0    0    0    0 :   62

 5. -  8. :    0    0    0    2    2    0    2    5    6   36   30    4    2    4    1    2    0 :   96

 3. -  5. :    5    3    7    8    4   13   16   13   14   28   13    9    9    2   16   14    0 :  174

 1. -  3. :   13    4   10   12    8   25   31   15   10   21   18   12   17   21   27   18    0 :  262

 LT   1.  :    5    5    9    2    7    4    7    6   11   18    7   11    6   11    8    6    0 :  123

  TOTAL   :   23   12   26   24   21   42   56   41   47  131   91   38   35   38   52   40    0    717
          ...........................................................................................

  PERCENT      3.   2.   4.   3.   3.   6.   8.   6.   7.  18.  13.   5.   5.   5.   7.   6.   0.  100.

          0 = NO OBSERVATIONS
```

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(7/01/82 TO 7/31/82)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																		
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR		TOTAL
		5	5	5	6	7	5	8	11	11	12	10	10	9	8	7	6	0		
GT 11.	:	0	0	0	0	0	0	0	1	1	9	0	0	0	0	0	0	0	:	11
8. - 11.	:	0	0	0	0	0	0	1	0	6	28	33	4	1	1	0	0	0	:	74
5. - 8.	:	1	1	1	3	2	5	4	5	13	38	29	5	2	6	1	4	0	:	120
3. - 5.	:	10	0	7	10	5	12	22	12	6	23	14	11	10	10	17	17	0	:	186
1. - 3.	:	17	9	6	10	7	17	31	18	12	19	12	13	16	25	23	19	0	:	254
LT 1.	:	5	1	6	6	2	5	6	7	4	11	5	6	6	1	3	3	0	:	77
TOTAL	:	33	11	20	29	16	39	64	43	42	128	93	39	35	43	44	43	0		722
PERCENT		5.	2.	3.	4.	2.	5.	9.	6.	6.	18.	13.	5.	5.	6.	6.	6.	0.		100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AD20 PERIOD(7/01/82 TO 7/31/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	3	3	3	4	4	7	5	5	5	6	5	6	7	5	3	4	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 8. :	0	0	0	0	0	4	2	4	7	5	8	2	4	1	0	0	0 :	37
3. - 5. :	1	1	1	3	10	24	5	7	24	16	14	6	21	5	1	2	0 :	141
1. - 3. :	3	7	8	13	147	112	11	9	5	10	13	14	31	15	4	4	0 :	406
LT 1. :	0	0	1	1	6	2	1	1	0	0	1	2	2	0	1	0	0 :	18
TOTAL :	4	8	10	17	163	142	19	21	36	31	36	24	58	21	6	6	0	602
PERCENT	1.	1.	2.	3.	27.	24.	3.	3.	6.	5.	6.	4.	10.	3.	1.	1.	0.	100.

0 = NO OBSERVATIONS

```
FIVE MAXIMUM SLIDING AVERAGE                                                 C-B TRACT
UG/M**3                                                                      SITE AB23
                                                                             JULY 1982
                                                                             CATHEDRAL BLUFFS SHALE OIL CO.

       COMPONENT        AVG. TIME       RANK       DAY       HOUR(BEG)       VALUE
         SO2                3 HR
                                          1          1          14              7.9
                                          2          1          10              6.1
                                          3          2          11              6.1
                                          4          2          14              6.1
                                          5          2          18              6.1
         SO2               24 HR
                                          1          1           7              5.7
                                          2          2           9              5.3
                                          3          7           2              5.0
                                          4         14           4              4.8
                                          5         10           7              4.7
         CO                 1 HR
                                          1          1          15            100.0
                                          2          1          16            100.0
                                          3          1          23            100.0
                                          4          1          24            100.0
                                          5          2           1            100.0
         CO                 8 HR
                                          1          7          20            100.0
                                          2         12          24            100.0
                                          3         21           9            100.0
                                          4         10          12            100.0
                                          5         14          12            100.0
         O3                 1 HR
                                          1         14          18            109.9
                                          2          3          18            107.9
                                          3         14          17            107.9
                                          4          3          17            105.9
                                          5          3          19            105.9
         PART              24 HR
                                          1         18           1             47.7
                                          2          2           1             45.3
                                          3         22           1             31.2
                                          4          6           1             28.2
                                          5         10           1             27.7
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

JULY 1982

GASEOUS PARAMETERS	
NOX:	97 %
NO:	97
NO2:	97
O3:	97
CO:	97
SO2:	97
H2S:	97

PARTICULATES: 100 %

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	97 %
30 M:	97
60 M:	97
WIND DIRECTION	
10 M:	97
30 M:	97
60 M:	97
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	97
30 M:	97
60 M:	97
TEMPERATURE	
10 M:	97
30 M:	97
60 M:	97
DELTA TEMPERATURE:	97
RELATIVE HUMIDITY:	97
SOLAR RADIATION:	97
BAROMETRIC PRESSURE:	97
PRECIPITATION:	88

AUGUST

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-353
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-354
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-355
Ozone (O_3) at Station AB23 . . . . II-356
Carbon Monoxide (CO) at Station AB23 . . . . II-357
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-358
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-359
Particulates Daily Average at Stations AB23 . . . . II-360

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-361
Wind Speed at Station AA23 - 30 Meter Level II-362
Wind Speed at Station AA23 - 60 Meter Level II-363
Wind Direction at Station AA23 - 10 Meter Level II-364
Wind Direction at Station AA23 - 30 Meter Level II-365
Wind Direction at Station AA23 - 60 Meter Level II-366
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-367
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-368
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-369
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-370
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-371
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-372
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-373
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-374
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-375
Delta Temperature (60m - 10m) at Station AA23 . . . . II-376
Relative Humidity at Station AB23 - 3 Meter Level II-377
Solar Radiation at Station AB23 . . . . II-378
Barometric Pressure at Station AB23 . . . . II-379
Precipitation at Station AB23 . . . . II-380
Precipitation at Station AD28 . . . . II-381
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-382

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-383
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-384
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-385
Ozone (O_3) at Station AB23. . . . . II-386
Carbon Monoxide (CO) at Station AB23. . . . . II-387
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-388
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-389

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-390
Station AA23 - 30 Meter Level II-391
Station AA23 - 60 Meter Level II-392

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-393

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-394

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
2	1	1	1	1	1	1	1	1	1	1	1	1	(PF)	1	1	1	1	1	1	1	1	1	1	2	1	2
3	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	2
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	2	1	2
5	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	2	1	2
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	1	2
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	2	1	2
9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
16	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	1	1	1	1	1	1	1	1	1	2	( )	2
19	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1
20	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
21	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	2	1	2
22	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	2	1	2
23	0	1	1	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	2	1	2
24	0	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1
25	0	0	1	1	1	0	0	0	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	2	1	2
26	0	0	0	1	0	0	1	0	1	1	0	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1
27	0	0	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	1
28	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	0	1	0	1	1	0	0	0	2	1	2
29	0	1	0	0	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	1	1
30	0	0	1	1	0	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	0	0	1	2	1	2
31	0	0	1	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	0	1
AV	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
PK	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2		2

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	2	0	0	0	2	2	2	2	2	2	0	0	0	2	2	0	0	2	0	0	2	2	2	1	2
2	2	2	2	2	2	2	2	2	2	2	2	2	(PF)	2	2	2	2	2	2	2	2	2	2	2	2	2
3	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2
4	2	2	2	2	2	0	2	2	2	2	2	2	0	0	0	2	0	2	0	0	2	0	2	0	1	2
5	2	0	0	0	0	2	2	2	4	2	0	2	0	2	2	2	2	2	2	2	2	2	2	0	1	4
6	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	2	2	2	0	2	0	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2
8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	4
9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	2	2	2	2	2	2	2	2
10	2	2	2	0	0	0	0	4	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	0	1	4
11	4	2	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	4
12	2	2	2	2	2	2	2	2	4	2	0	2	2	2	2	2	2	2	0	0	0	0	0	0	1	4
13	2	2	2	2	2	2	0	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
15	2	0	0	2	2	2	2	4	2	2	2	2	2	2	2	2	2	0	2	0	2	2	2	2	2	4
16	2	2	0	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	4	2	4	2	2	2	2	2	2	2	( )	4
19	2	2	2	4	2	2	2	4	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4
20	2	2	2	2	2	2	4	6	4	4	2	2	4	2	2	2	2	2	2	4	2	2	2	2	2	6
21	4	4	2	2	2	2	2	2	4	2	4	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4
22	4	2	2	2	2	2	2	2	4	4	4	2	2	4	4	4	4	4	2	2	4	2	2	2	3	4
23	4	4	2	2	2	2	2	4	4	4	4	4	4	4	4	2	2	2	4	2	2	2	2	2	3	4
24	4	2	2	4	2	2	2	4	4	4	4	4	4	2	2	2	2	4	2	2	2	2	2	2	3	4
25	2	2	2	2	2	2	2	2	4	4	4	4	4	2	4	4	4	2	2	2	2	2	2	4	3	4
26	2	2	2	2	2	2	2	2	2	2	4	4	2	4	2	2	2	2	2	0	2	2	2	2	2	4
27	2	2	2	2	2	2	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	4
28	4	4	2	2	2	0	0	2	2	2	4	2	2	2	2	2	2	2	0	2	2	2	2	2	2	4
29	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	0	2	2	2	2	4
30	0	2	0	2	2	0	0	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	1	2
31	0	2	0	0	2	2	0	2	2	2	2	2	2	2	0	0	0	0	0	0	2	0	0	0	1	2
AV	2	2	1	2	2	1	2	3	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	
PK	4	4	2	4	2	2	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	4		6

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2
9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
12	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	2	0	2	0	0	0	0	0	0	0	( )	2
19	2	0	0	4	0	0	0	2	0	2	2	0	2	0	0	0	0	0	0	2	0	0	0	2	1	4
20	2	0	0	0	2	0	2	4	2	2	0	0	2	0	0	0	0	0	0	2	0	0	0	0	1	4
21	2	2	0	2	0	0	0	0	2	0	2	0	0	0	2	0	0	0	0	0	0	2	0	0	1	2
22	2	0	2	0	0	0	2	2	2	4	2	0	0	2	2	2	2	4	0	0	2	0	0	0	1	4
23	4	2	0	2	2	0	0	2	2	2	2	2	4	2	2	0	0	0	2	0	0	0	0	0	1	4
24	4	0	0	2	2	0	0	2	2	2	2	4	2	0	0	0	0	2	0	2	2	0	2	0	1	4
25	2	2	0	0	0	2	2	2	2	2	2	2	4	2	2	2	2	0	0	2	0	2	0	0	1	4
26	2	2	2	0	2	2	0	2	0	0	4	2	0	2	2	2	0	0	2	0	2	2	0	0	1	4
27	2	2	2	0	2	0	0	4	2	2	0	2	2	2	2	2	2	0	0	0	2	2	0	0	1	4
28	4	4	2	2	0	0	0	0	2	0	2	2	2	0	2	2	0	2	0	0	2	2	2	0	1	4
29	4	0	2	2	0	2	0	0	2	0	0	0	2	0	0	0	2	0	0	0	0	2	2	0	1	4
30	0	2	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
31	0	2	0	0	2	0	0	2	2	2	0	2	0	2	0	0	0	0	0	0	2	0	0	0	1	2
AV	1	1	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	
PK	4	4	2	4	2	2	2	4	2	4	4	4	4	2	2	2	2	4	2	2	2	2	2	2		4

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	67	65	63	67	63	63	59	59	67	80	80	80	78	78	78	78	80	78	71	76	80	82	76	63	72	82
2	67	55	53	43	43	41	37	43	61	73	76	78	(PF)	63	74	82	73	78	71	65	67	65	63	63	62	82
3	57	61	59	53	57	55	63	73	78	78	74	76	82	84	80	80	80	84	82	73	63	67	63	59	70	84
4	57	61	57	55	53	53	51	61	65	73	74	74	78	80	84	88	88	92	88	78	78	78	80	82	72	92
5	82	84	78	82	71	74	63	74	76	80	88	88	88	88	88	88	90	90	88	78	71	74	67	73	80	90
6	69	74	78	65	73	71	63	67	71	80	86	94	94	94	98	100	100	96	94	92	82	78	80	78	82	100
7	73	82	80	76	74	78	71	76	82	86	88	94	96	92	90	98	94	90	84	69	96	102	135	143	90	143
8	(CA)	82	80	80	80	80	78	82	94	100	100	98	98	94	92	94	94	80	80	69	69	63	61	65	83	100
9	49	67	61	59	61	57	53	67	80	84	84	84	84	88	90	90	84	80	82	74	67	63	63	65	72	90
10	65	63	67	67	65	67	65	61	49	73	76	82	80	74	71	74	74	71	73	73	69	73	71	65	69	82
11	57	59	59	59	63	65	67	63	57	59	65	67	82	82	84	84	82	80	78	74	65	61	59	65	68	84
12	76	73	78	74	69	69	67	69	86	94	98	82	80	78	73	86	80	78	71	69	65	61	71	61	75	98
13	65	65	67	61	53	63	67	55	49	39	43	53	69	69	67	63	73	73	67	49	43	43	55	61	59	73
14	29	22	20	16	31	49	41	41	67	74	80	74	82	76	69	78	80	73	65	55	49	39	35	45	54	82
15	55	65	69	67	63	65	53	43	51	73	90	90	90	86	82	80	74	69	69	63	61	63	63	65	69	90
16	61	61	63	61	59	61	57	47	55	69	82	86	82	76	71	69	69	71	63	69	63	65	61	59	66	86
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	( )	( )
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	94	98	108	94	(CA)	106	98	96	98	94	86	86	96	98	88	96	108
19	73	80	80	78	76	80	71	67	80	86	90	86	88	100	88	76	78	78	80	74	65	84	80	82	80	100
20	84	88	84	74	80	78	71	71	76	84	90	92	82	90	96	100	102	98	82	80	74	73	69	65	83	102
21	65	74	82	78	71	71	71	57	49	69	86	96	100	98	88	86	74	78	82	94	88	82	82	80	79	100
22	80	80	92	90	86	76	74	71	90	88	100	86	82	88	84	73	59	51	57	73	80	80	78	74	79	100
23	63	69	71	67	63	65	61	65	84	98	98	100	82	90	76	82	84	82	76	76	74	74	76	80	77	100
24	73	74	69	67	71	61	41	43	45	55	67	78	80	80	76	76	74	73	69	61	63	61	67	67	66	80
25	71	78	74	71	74	71	65	61	69	61	74	80	80	71	71	78	80	80	78	74	67	63	67	67	72	80
26	69	71	69	71	71	65	61	78	86	86	84	82	82	82	84	84	86	84	82	82	82	76	74	78	78	86
27	63	67	69	69	69	73	63	59	84	84	84	74	74	76	78	78	76	74	69	63	63	61	63	67	71	84
28	69	67	69	67	67	67	59	51	73	78	82	86	86	84	88	88	82	80	78	71	67	76	73	59	74	88
29	51	57	43	43	49	55	51	59	71	84	84	84	80	84	86	84	82	82	74	65	69	65	69	71	68	86
30	63	69	73	67	69	61	65	57	67	78	80	78	76	80	80	82	82	82	76	71	69	69	71	71	72	82
31	67	63	61	61	61	61	61	59	71	76	78	74	78	74	73	74	74	73	67	57	53	57	63	63	67	78
AV	65	68	68	65	65	65	61	61	70	78	83	84	84	83	82	83	82	80	76	72	70	70	71	71	74	
PK	84	88	92	90	86	80	78	82	94	100	100	108	100	100	106	100	102	98	94	94	96	102	135	143		143

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	5	100
2	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	0	0	0	0	(PF)	(PF)	(PF)	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	29	100
4	100	100	100	100	100	100	100	100	(MT)	(MT)	(MT)	100	100	100	0	0	0	0	0	100	0	0	0	0	66	100
5	0	0	0	0	0	0	0	0	100	0	0	100	100	100	0	0	0	0	0	0	0	0	0	0	19	100
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	0	0	0	14	100
9	0	0	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	0	0	100	100	100	100	0	0	0	0	21	100
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	0
13	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
14	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
15	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
16	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	( )	0
18	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	10	200
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	5	100
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	200	29	200
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	10	100
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	5	100
30	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
31	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	0	0	0	0	0	0	0	0	0	24	100
AV	4	4	9	4	4	4	4	4	5	0	14	23	25	29	18	0	4	5	14	19	5	5	4	13	10	
PK	100	100	100	100	100	100	100	100	100	0	200	100	100	100	100	0	100	100	100	100	100	100	100	200		200

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	5	5	5	3	5	5	5	5	5	5	5	5	5	8	8	5	8	8	8	5	5	5	5	5	6	8
2	3	3	5	3	3	3	3	3	5	3	3	5	(PF)	0	3	3	5	5	3	3	3	5	3	5	3	5
3	5	3	5	3	5	3	3	3	5	5	5	5	5	5	5	5	8	5	8	5	8	5	5	5	5	8
4	5	5	5	5	5	8	5	8	5	8	8	8	5	3	5	3	5	5	5	5	3	5	3	3	5	8
5	3	5	5	3	3	3	3	5	3	5	3	5	5	5	3	3	3	3	0	0	0	0	0	0	3	5
6	0	0	0	3	0	0	0	0	0	0	0	3	3	3	3	3	3	0	0	3	0	0	0	0	1	3
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	3
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
9	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	3	0	0	0	0	0	0	0	0	0	3
10	3	0	0	0	0	0	0	(CA)	0	3	0	0	3	3	3	0	0	0	3	0	0	0	0	0	1	3
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
14	0	3	0	3	0	0	0	0	0	0	0	3	3	0	3	3	0	0	0	0	0	0	0	0	1	3
15	0	0	0	0	3	0	0	0	3	3	3	3	5	3	5	3	3	3	3	3	0	3	3	3	2	5
16	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	0	3	0	0	0	0	0	0	2	3
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	13	16	13	13	10	10	10	8	10	8	8	8	11	16
19	8	5	5	5	8	5	5	5	5	5	5	8	8	8	8	5	5	5	5	5	3	3	5	3	6	8
20	3	5	5	5	5	3	5	5	3	3	5	8	5	5	5	5	5	5	5	5	3	3	3	3	4	8
21	3	3	3	3	3	3	3	0	3	3	3	3	3	5	5	3	3	3	5	3	3	3	3	3	3	5
22	0	0	3	3	3	0	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	1	3
23	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	0
24	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	5	5	0	0	3	3	0	0	0	0	0	( )	5
25	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
26	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	3	3	3	0	3	3	3	0	0	1	3
27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
28	3	3	0	3	0	0	0	3	0	3	3	3	0	0	3	3	3	0	0	0	3	0	0	0	1	3
29	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	3	3	3	3	3	0	3	0	0	1	3
30	0	0	3	0	3	0	0	0	3	3	3	3	3	3	3	3	3	3	0	3	0	3	0	0	2	3
31	0	3	0	0	0	0	0	0	0	0	3	5	5	5	3	3	3	3	0	0	0	0	0	0	1	5
AV	2	2	2	1	2	1	1	1	2	2	2	3	3	3	3	3	3	2	2	2	1	2	1	1	2	
PK	8	5	5	5	8	8	5	8	5	8	8	8	13	16	13	13	10	10	10	8	10	8	8	8		16

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	3	1	3	4	4	4	3	1	3	3	4	1	4
3	4	4	4	3	3	1	3	3	4	1	4	4	4	4	4	4	4	4	4	4	4	1	1	3	3	4
4	1	3	3	3	3	3	3	3	3	4	6	6	4	4	3	4	3	4	4	6	6	4	4	4	4	6
5	7	7	7	7	6	1	3	3	4	4	6	6	6	8	8	6	6	4	4	6	6	6	6	4	5	8
6	6	6	4	4	6	7	6	6	4	4	6	6	6	7	7	6	6	6	6	6	6	8	8	7	6	8
7	4	4	6	3	3	4	4	4	7	7	7	6	6	6	4	3	3	4	4	4	4	4	4	3	4	7
8	1	3	1	1	1	1	1	3	6	7	7	3	6	4	4	4	4	6	3	1	1	1	1	1	3	7
9	0	0	1	1	3	3	3	1	1	3	1	1	1	3	4	6	4	3	3	4	4	4	4	3	3	6
10	4	4	4	3	3	4	4	(CA)	3	4	4	1	1	3	3	3	1	4	7	7	6	3	1	0	3	7
11	0	0	0	1	0	0	0	1	1	0	1	3	1	3	1	0	0	0	1	0	0	0	0	1	1	3
12	1	3	1	1	1	1	1	1	1	3	3	3	3	3	1	1	1	1	3	1	3	1	1	3	2	3
13	0	1	0	1	1	1	1	1	1	1	3	1	3	4	4	6	4	4	4	4	4	4	3	4	3	6
14	1	1	3	1	3	1	3	3	3	3	4	7	6	3	4	4	4	6	6	4	6	4	3	3	4	7
15	4	3	3	3	4	3	3	4	6	6	4	4	7	7	7	6	6	6	7	7	6	6	6	4	5	7
16	4	4	3	4	3	3	3	3	3	3	3	3	3	3	3	1	3	4	4	3	3	1	3	1	3	4
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	7	8	7	6	4	4	3	4	1	3	3	3	4	8
19	0	0	0	0	0	0	0	0	1	1	1	3	3	4	4	3	4	6	4	6	6	6	6	4	3	6
20	4	4	4	4	4	4	3	4	4	4	4	6	6	6	4	4	6	6	4	3	4	3	3	3	4	6
21	3	4	4	3	3	4	3	3	4	3	3	4	4	4	4	4	4	4	4	4	3	3	3	1	3	4
22	0	0	1	0	1	0	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	1	1
23	0	0	3	3	1	1	3	1	3	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	3
24	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	4	3	3	3	1	1	0	0	0	0	0	( )	4
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	3	0	3
26	1	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
28	0	0	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
29	1	3	3	3	3	3	4	3	4	4	3	3	3	3	1	1	4	3	3	3	3	1	3	1	3	4
30	1	3	1	1	1	3	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
31	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
AV	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	
PK	7	7	7	7	6	7	6	6	7	7	7	7	7	8	8	6	6	6	7	7	6	8	8	7		8

PARTICULATE DATA
UG/M3

C-B TRACT
AUG 1982
OCCIDENTAL OIL SHALE, INC.

		STATION			
DAY	AB20	AB23	AB26	AD42	AD56
3	( )	10.6	( )	( )	( )
7	( )	11.2	( )	( )	( )
11	( )	9.4	( )	( )	( )
15	( )	9.4	( )	( )	( )
19	( )	25.7	( )	( )	( )
23	( )	24.5	( )	( )	( )
27	( )	(WR)	( )	( )	( )
31	( )	21.7	( )	( )	( )
AVE	( )	16.1	( )	( )	( )
GM	( )	14.6	( )	( )	( )
PEAK	( )	25.7	( )	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(CM)	0	0	1	2	3	2	2	1	3	4	4	4	4	3	4	4	4	4	5	5	5	7	7	3	7
2	4	1	1	2	2	1	1	3	2	4	4	3	(PF)	5	4	1	4	3	1	2	2	2	4	2	3	5
3	2	2	2	2	1	1	1	2	3	4	4	4	3	4	4	4	2	2	4	3	2	3	0	0	2	4
4	0	0	1	1	2	2	1	1	0	1	0	2	2	2	4	4	3	3	3	3	2	1	1	1	2	4
5	1	0	1	1	0	1	0	0	1	1	0	2	1	1	2	2	2	1	0	0	0	0	1	2	1	2
6	1	0	0	2	1	0	0	0	1	2	2	2	2	1	1	1	2	3	2	1	3	1	1	2	1	3
7	2	4	2	1	2	3	1	1	1	2	2	1	2	6	4	3	1	2	1	1	2	4	3	3	2	6
8	2	2	3	3	2	2	1	1	3	3	4	2	1	3	3	2	1	3	2	2	3	1	3	3	2	4
9	2	4	0	1	1	2	1	1	3	3	3	4	4	3	4	4	2	2	(CM)	3	2	2	2	2	2	4
10	3	1	2	2	2	2	1	1	4	3	3	3	2	1	4	3	5	4	4	4	3	4	4	3	3	5
11	3	2	2	3	3	2	2	5	4	4	3	2	6	5	5	5	4	2	3	3	2	1	2	2	3	6
12	1	2	2	2	1	2	1	2	4	3	2	3	3	3	3	5	4	4	2	1	3	2	1	2	2	5
13	2	2	2	1	1	0	2	2	1	1	1	2	2	1	3	3	3	1	1	(CM)	1	2	1	1	2	3
14	1	0	0	1	1	1	1	0	0	0	0	2	1	1	2	2	2	2	1	1	2	2	1	0	1	2
15	1	(CM)	0	1	1	0	1	1	1	1	1	1	1	1	1	2	2	4	5	2	4	6	4	2	2	6
16	1	1	1	0	1	1	1	1	1	1	1	1	2	3	3	2	3	1	2	2	1	0	1	1	1	3
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	2	2	4	1	2	1	1	1	( )	4
18	1	1	2	0	0	2	3	2	1	0	0	3	2	3	1	4	2	2	2	1	1	1	1	1	2	4
19	0	(CM)	1	1	1	0	0	1	1	1	1	0	2	1	1	3	3	2	1	1	1	1	1	2	1	3
20	2	1	1	1	1	1	1	1	1	1	1	1	3	2	2	2	1	1	3	1	1	0	1	2	1	3
21	0	2	2	0	0	0	1	1	(CM)	1	1	1	1	2	2	0	2	2	3	2	2	2	2	2	1	3
22	1	1	1	1	2	2	1	(CM)	0	1	3	3	1	3	4	1	0	1	2	4	3	1	2	2	2	4
23	1	2	2	2	2	2	2	1	0	1	1	1	1	2	2	3	3	2	2	3	2	2	2	2	2	3
24	2	2	0	1	0	1	2	1	2	2	2	1	1	1	2	2	3	3	0	1	2	2	0	1	2	3
25	1	2	1	1	1	1	1	1	0	1	4	4	5	5	3	4	5	5	4	3	3	2	1	2	3	5
26	2	2	2	1	1	2	2	3	4	3	3	2	3	3	1	3	4	3	3	3	0	2	2	1	2	4
27	1	2	1	1	0	(CM)	1	1	1	1	2	(CM)	1	0	1	1	2	3	2	2	2	0	1	1	1	3
28	1	1	2	1	0	1	0	1	2	3	3	5	4	5	5	5	4	4	4	3	2	2	1	1	3	5
29	1	0	2	1	3	3	1	2	2	3	3	3	5	6	4	4	3	0	2	2	1	0	0	0	2	6
30	0	0	(CM)	1	1	0	0	1	0	3	4	5	4	5	5	5	4	4	3	4	2	0	0	1	2	5
31	(CM)	1	1	1	0	1	1	1	2	3	3	4	4	3	4	4	4	3	2	3	0	1	0	(CM)	2	4
AV	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	
PK	4	4	3	3	3	3	3	5	4	4	4	5	6	6	5	5	5	5	5	5	5	6	7	7		7

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	0	2	4	4	4	3	1	4	5	5	5	5	4	5	5	5	5	8	8	7	9	10	5	10
2	6	1	2	4	4	3	2	4	2	6	5	4	(PF)	7	7	2	6	4	2	4	4	4	6	4	4	7
3	3	3	3	3	2	2	2	3	4	4	5	4	4	5	4	4	3	3	5	4	4	5	2	0	3	5
4	1	0	0	0	0	1	1	1	0	1	0	3	3	3	4	5	4	4	4	5	5	1	1	1	2	5
5	1	0	0	1	0	1	1	0	1	1	1	2	2	2	2	2	3	2	0	1	0	(CM)	2	1	1	3
6	1	1	(CM)	3	1	0	0	0	1	2	2	3	3	2	2	1	3	4	4	2	4	1	2	2	2	4
7	4	5	4	2	3	5	3	2	2	3	2	1	3	9	7	4	2	3	2	2	4	6	5	4	3	9
8	3	3	4	5	4	3	2	2	4	4	4	3	2	4	4	2	1	4	2	3	4	1	4	5	3	5
9	3	6	0	2	2	2	2	2	4	4	4	4	5	4	5	5	3	3	0	4	3	2	2	4	3	6
10	4	1	3	3	4	3	2	1	6	4	4	4	3	2	6	4	7	6	6	6	5	5	6	4	4	7
11	4	4	4	4	4	4	4	8	6	5	4	3	7	7	6	7	5	3	4	5	3	2	2	2	4	8
12	2	3	2	2	2	3	2	3	5	4	3	4	4	5	4	8	7	6	4	3	4	4	2	2	4	8
13	3	4	4	3	1	0	3	3	2	1	1	2	2	1	4	4	3	1	1	(CM)	2	4	2	1	2	4
14	1	0	0	0	2	2	1	(CM)	0	1	1	3	1	1	3	2	3	3	2	2	3	2	1	0	2	3
15	1	(CM)	1	3	1	0	2	1	1	1	1	1	1	1	2	3	2	5	8	3	5	8	6	3	3	8
16	1	2	2	0	0	2	1	1	1	2	1	2	2	4	4	3	4	2	4	4	1	0	1	0	2	4
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	3	3	5	1	4	1	2	1	( )	5
18	1	1	4	(CM)	1	4	5	4	1	0	0	4	2	3	1	4	3	3	3	2	1	1	0	1	2	5
19	0	0	1	1	1	0	(CM)	1	1	1	1	1	2	1	2	4	4	2	2	1	0	2	2	2	1	4
20	2	2	2	1	2	0	1	1	1	1	1	1	5	3	3	3	1	1	4	2	0	1	2	4	2	5
21	1	3	3	1	0	0	0	1	(CM)	1	1	1	1	3	3	1	3	2	4	3	3	3	2	2	2	4
22	2	2	2	2	2	4	2	0	1	1	4	4	2	4	6	1	0	2	4	6	5	1	2	3	3	6
23	1	4	3	3	3	3	3	2	0	1	2	2	1	3	2	4	4	3	4	4	3	4	3	4	3	4
24	4	4	1	2	0	2	3	1	2	2	2	2	2	1	3	3	4	4	1	1	2	2	0	0	2	4
25	2	2	1	0	2	2	2	2	0	1	5	6	7	7	4	5	6	7	5	4	4	2	2	3	3	7
26	3	2	2	2	1	3	3	4	6	4	3	2	3	3	2	4	5	4	4	4	1	4	3	1	3	6
27	2	2	1	0	(CM)	0	1	1	1	1	3	0	1	1	1	1	3	4	3	4	4	1	0	0	2	4
28	2	1	2	3	0	1	1	1	2	4	4	6	6	7	7	6	6	5	5	5	3	4	2	1	3	7
29	1	1	3	2	5	4	2	2	2	4	4	4	7	8	5	4	4	0	4	4	1	0	0	0	3	8
30	1	0	0	0	2	1	1	0	1	4	6	7	5	7	7	7	6	5	4	6	3	0	1	3	3	7
31	1	1	0	2	1	0	0	0	3	4	4	5	5	4	5	6	5	4	4	5	1	1	0	0	3	6
AV	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	3	4	4	3	3	2	2	3	
PK	6	6	4	5	5	5	5	8	6	6	6	7	7	9	7	8	7	7	8	8	8	8	9	10		10

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	1	0	1	3	4	4	3	1	4	5	6	5	5	4	6	6	6	6	9	9	8	11	12	5	12
2	8	1	2	4	4	4	3	4	3	6	5	5	(PF)	8	8	2	7	4	2	4	5	6	7	4	5	8
3	4	3	4	3	3	3	3	4	5	5	6	5	4	5	5	5	3	4	6	5	5	6	4	2	4	6
4	2	2	3	2	2	2	(CM)	2	0	1	0	3	3	4	5	5	5	4	5	6	7	1	0	1	3	7
5	1	2	1	2	1	1	1	1	1	2	1	2	2	2	3	3	3	2	0	1	1	1	3	1	2	3
6	1	2	1	3	2	0	1	1	2	2	2	3	3	2	2	1	4	4	4	2	5	3	3	2	2	5
7	4	7	5	3	4	6	4	2	2	3	2	2	3	11	8	4	2	3	2	2	4	8	6	5	4	11
8	5	4	5	6	4	3	3	2	4	5	5	3	2	4	4	2	1	5	3	3	4	2	5	6	4	6
9	4	7	1	2	1	2	3	2	4	4	4	5	6	4	6	5	4	3	0	5	3	3	2	5	4	7
10	4	0	1	3	4	4	2	1	6	4	5	4	3	2	7	4	7	7	7	7	6	7	8	5	5	8
11	5	5	4	4	4	4	4	9	8	6	5	4	8	7	7	8	6	3	4	6	3	2	3	2	5	9
12	4	3	1	2	2	3	3	4	5	4	4	4	6	6	4	10	8	8	5	5	5	5	4	2	4	10
13	3	4	4	4	3	2	4	4	3	2	2	2	2	2	4	4	4	1	1	0	2	5	2	2	3	5
14	1	1	1	1	2	2	1	0	1	1	1	3	2	1	3	3	3	3	2	3	3	3	2	0	2	3
15	1	1	1	2	1	1	3	1	1	2	1	1	2	2	2	3	2	6	9	4	6	9	8	4	3	9
16	1	2	3	1	0	2	2	(CM)	1	2	1	2	3	5	4	4	4	2	4	5	0	0	1	0	2	5
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	6	0	4	1	3	1	( )	6
18	2	0	3	1	1	4	6	4	1	0	0	4	3	4	1	5	4	3	3	2	2	2	1	1	2	6
19	1	1	1	1	1	1	3	1	1	1	2	1	3	1	2	5	4	3	2	1	1	2	3	2	2	5
20	2	3	2	1	3	0	1	1	1	2	1	2	6	4	3	3	1	1	4	3	2	1	1	5	2	6
21	3	2	4	1	1	2	2	2	1	2	1	1	1	4	3	1	4	3	4	4	3	2	2	3	2	4
22	3	4	2	2	2	4	3	2	1	1	4	4	2	4	6	1	0	2	4	7	6	2	1	3	3	7
23	1	3	3	3	3	2	3	2	0	2	2	2	1	3	3	5	4	4	5	5	3	4	3	5	3	5
24	5	6	3	2	1	3	4	2	2	3	3	3	2	2	3	4	4	4	1	1	1	2	0	(CM)	3	6
25	1	2	3	1	3	3	2	2	1	3	6	6	8	8	5	6	7	8	6	5	4	4	3	4	4	8
26	4	3	3	3	2	3	4	4	6	4	4	3	4	4	3	4	5	4	5	5	1	4	3	2	4	6
27	3	3	1	0	1	1	1	1	2	1	3	0	1	1	1	1	3	4	4	4	4	3	2	0	2	4
28	1	1	2	4	2	2	2	2	3	4	4	7	6	8	8	7	7	6	6	7	4	4	2	2	4	8
29	1	1	5	2	6	6	4	2	3	4	4	4	8	8	5	5	4	1	4	5	3	1	0	0	4	8
30	0	1	0	1	2	2	2	1	1	4	6	8	6	8	7	8	7	6	5	8	4	1	2	5	4	8
31	3	4	3	4	2	1	1	1	4	4	4	6	6	5	6	7	6	5	5	6	2	1	1	1	4	7
AV	3	3	2	2	2	3	3	2	3	3	3	4	4	4	4	4	4	4	4	4	4	3	3	3	3	
PK	8	7	5	6	6	6	6	9	8	6	6	8	8	11	8	10	8	8	9	9	9	9	11	12		12

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(CM)	214	90	128	112	120	99	73	33	248	207	196	184	188	191	170	208	201	187	217	219	197	195	176	176
2	192	84	130	50	119	116	126	128	166	215	206	207	(PF)	79	94	204	54	77	140	123	132	161	172	143	135
3	120	101	111	104	128	114	150	184	204	212	189	210	229	221	314	255	256	212	203	199	205	201	200	79	185
4	349	31	71	86	77	91	99	68	81	306	127	230	169	196	221	216	217	238	227	204	204	55	165	143	150
5	152	164	223	191	187	232	39	281	331	338	318	17	4	303	258	304	298	291	326	86	221	200	247	142	270
6	173	184	158	242	149	250	161	321	308	307	332	333	327	69	124	137	46	39	73	123	159	115	151	123	131
7	137	161	162	156	141	154	135	112	221	336	339	35	35	163	160	137	120	115	111	173	143	141	163	152	139
8	168	132	149	147	135	156	153	157	204	216	199	216	274	324	12	85	283	282	274	333	320	77	109	124	177
9	169	202	49	95	109	115	106	151	204	207	269	306	317	324	273	251	308	286	(CM)	158	110	93	97	123	162
10	150	85	107	132	120	118	123	50	323	19	67	73	32	120	154	123	122	129	122	122	133	159	137	102	110
11	92	105	145	167	165	143	188	172	144	152	157	128	194	193	199	206	241	4	86	124	112	96	109	78	145
12	146	53	71	93	110	130	128	177	204	207	294	59	98	123	169	161	154	160	149	169	110	116	158	118	135
13	129	160	165	144	145	202	194	207	167	105	71	40	18	332	310	314	355	323	50	(CM)	139	166	188	168	145
14	229	294	228	222	132	157	202	0	341	343	261	291	0	186	134	203	152	75	34	104	150	215	204	128	193
15	166	(CM)	122	169	172	189	127	63	15	32	49	11	39	0	311	320	191	175	172	294	127	147	150	129	121
16	78	66	140	209	222	158	177	351	35	53	43	88	61	305	280	279	306	293	145	183	93	135	135	161	119
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	22	47	80	113	348	271	165	201	145	( )
18	148	92	109	149	151	128	151	122	332	308	45	222	282	303	315	122	117	116	133	191	186	240	198	172	156
19	180	(CM)	225	298	180	231	215	86	31	333	0	347	300	310	30	326	313	312	314	266	212	178	112	106	293
20	113	129	156	198	210	216	266	293	305	325	7	330	212	259	297	328	353	332	333	76	202	184	259	245	268
21	336	131	144	197	209	45	225	259	(CM)	208	90	27	343	320	305	192	180	153	341	287	224	202	202	118	213
22	145	277	163	141	162	213	183	(CM)	236	4	191	304	226	189	201	97	218	211	78	146	177	107	103	127	174
23	77	119	124	114	111	110	102	88	300	275	262	293	315	252	266	285	5	214	203	204	141	151	133	232	182
24	166	177	81	95	27	260	258	323	317	307	311	322	315	345	266	228	210	212	194	190	207	209	221	117	245
25	115	114	70	27	209	209	102	99	225	118	196	190	194	169	199	171	180	174	169	142	131	118	124	123	152
26	134	122	124	131	97	127	131	181	207	205	200	217	207	219	241	206	231	232	224	216	135	139	134	177	178
27	242	217	101	221	124	(CM)	105	77	235	351	266	(CM)	210	199	19	340	247	243	223	211	210	21	43	96	213
28	138	194	161	197	63	127	99	76	120	155	219	207	189	220	202	218	201	195	200	203	240	306	255	229	188
29	212	292	293	127	148	176	148	100	191	239	249	279	290	297	312	325	318	48	102	145	171	276	117	249	228
30	9	248	(CM)	167	136	85	135	47	248	218	233	239	239	252	239	233	232	237	221	201	206	117	90	207	209
31	(CM)	76	65	113	56	48	78	16	230	221	231	224	297	271	261	249	228	239	231	208	274	157	140	(CM)	221
PV	146	138	129	148	138	150	143	94	248	272	248	282	283	251	251	227	233	215	164	177	175	154	157	143	176

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	196	221	192	126	123	117	102	79	41	249	208	197	184	188	192	170	208	202	189	220	222	201	198	177	183
2	193	106	147	58	111	114	126	130	168	216	207	209	(PF)	78	94	204	54	76	125	120	130	156	166	142	135
3	131	115	115	119	154	144	159	186	204	212	191	213	230	221	313	252	258	212	203	201	204	197	197	191	192
4	238	235	209	157	153	133	104	71	90	298	140	232	171	197	223	217	221	237	229	207	203	58	137	148	185
5	131	172	229	203	247	238	10	261	332	340	320	19	5	305	259	298	297	288	333	69	132	(CM)	271	132	290
6	133	148	(CM)	254	193	292	259	292	302	305	329	336	327	72	123	131	46	40	74	85	148	143	158	129	109
7	132	155	161	166	153	149	140	113	226	332	339	38	41	165	161	137	115	112	104	137	126	140	167	158	137
8	180	154	143	146	135	152	146	158	204	220	200	217	268	321	13	84	286	283	280	331	318	69	111	124	181
9	175	203	90	113	118	119	115	155	205	210	271	303	317	321	270	248	312	291	153	163	121	134	113	115	171
10	148	106	108	125	115	116	128	52	322	20	67	74	36	115	154	123	121	130	125	123	137	161	138	107	111
11	97	104	157	177	164	149	197	179	146	155	160	123	194	195	199	207	242	6	86	123	125	121	133	89	151
12	157	63	84	100	108	129	131	182	203	209	294	59	98	122	167	157	151	160	156	185	117	112	160	130	138
13	126	149	165	153	160	209	202	212	169	128	76	37	22	329	308	312	353	321	55	(CM)	130	171	198	168	154
14	242	312	171	248	120	140	194	(CM)	335	356	266	289	2	192	131	201	153	77	37	86	140	186	204	166	179
15	161	(CM)	107	147	157	180	134	79	25	37	55	15	40	0	307	318	188	176	172	294	125	148	152	132	118
16	97	60	120	160	235	132	156	348	43	54	56	92	63	303	280	276	304	289	142	172	78	180	145	151	114
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	24	49	88	112	9	267	202	170	142	( )
18	151	75	98	(CM)	257	114	143	127	335	287	61	224	285	299	311	120	117	113	130	173	215	251	234	166	167
19	176	339	247	313	162	289	(CM)	92	39	335	2	354	301	309	31	325	311	307	311	309	214	162	142	120	318
20	112	126	137	174	175	219	323	287	304	326	6	324	211	257	297	327	352	327	335	73	144	132	288	251	287
21	309	115	138	175	253	0	236	256	(CM)	209	94	24	341	317	304	183	179	152	343	295	235	205	191	145	226
22	171	275	177	146	159	205	183	192	235	7	193	310	230	182	202	123	259	210	76	136	169	148	107	135	180
23	97	112	122	116	109	116	108	97	270	272	262	287	307	256	267	289	5	213	208	206	148	148	130	239	185
24	180	188	173	102	0	264	262	314	314	307	310	321	314	341	264	228	209	207	197	167	183	201	233	90	243
25	131	140	156	56	213	215	131	130	212	150	196	191	195	170	201	170	182	176	169	146	135	137	136	130	163
26	150	146	151	155	134	127	132	184	209	205	201	212	208	219	238	205	231	233	226	220	180	125	129	196	185
27	265	235	92	238	(CM)	107	115	96	229	349	265	129	211	197	22	335	244	241	220	204	198	196	254	102	210
28	130	197	158	197	173	155	159	121	120	153	222	208	190	221	202	220	202	198	201	201	225	311	287	268	194
29	215	321	317	101	136	159	152	108	190	242	253	282	293	303	313	324	317	45	100	131	159	245	68	277	243
30	25	354	319	207	154	202	204	66	241	223	235	243	243	254	242	235	234	239	223	205	204	165	196	195	223
31	195	193	184	189	191	0	63	300	233	225	233	226	297	267	259	248	227	240	235	207	252	168	164	11	228
PV	158	147	149	154	158	156	149	135	238	266	244	278	282	251	250	224	238	215	161	168	168	163	168	149	181

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	194	207	251	122	135	124	108	93	53	247	208	199	186	191	194	173	209	202	191	222	225	205	200	178	186
2	194	151	177	56	105	113	130	137	174	217	210	211	(PF)	86	101	201	57	79	108	115	128	152	158	147	139
3	151	139	133	154	183	173	174	191	206	212	194	215	232	222	313	257	257	215	204	210	217	203	204	196	201
4	202	205	200	199	213	212	(CM)	76	141	303	148	235	176	199	224	217	222	236	231	217	214	193	315	174	208
5	157	156	129	169	266	122	290	222	337	346	338	20	10	309	263	303	304	294	347	69	115	133	284	163	300
6	90	136	143	267	237	336	241	281	305	313	336	340	337	73	127	130	49	45	78	79	149	153	164	146	94
7	138	148	158	161	158	150	148	120	229	336	348	47	46	167	165	138	114	116	103	121	118	142	174	169	137
8	190	174	150	154	147	163	153	167	205	221	201	219	262	326	17	87	296	293	281	328	322	39	113	127	193
9	184	205	169	139	117	134	136	158	207	214	270	307	320	326	276	254	310	288	160	169	137	162	141	117	189
10	156	98	106	127	118	117	136	68	331	24	74	81	44	110	157	130	127	136	134	129	142	166	144	125	116
11	111	117	171	192	169	161	207	186	153	162	167	130	196	197	201	207	242	10	90	126	143	158	165	122	163
12	173	79	97	118	120	141	147	188	203	211	300	59	98	125	168	157	153	163	162	192	134	122	166	168	148
13	139	152	170	157	172	216	208	220	174	157	91	51	28	339	314	319	353	332	69	39	134	180	217	179	158
14	221	253	314	288	117	145	205	231	333	3	285	297	5	194	135	201	159	81	40	81	136	172	199	351	207
15	165	320	101	151	167	107	131	129	45	44	63	27	45	1	315	325	189	177	173	287	127	151	157	145	117
16	135	50	104	124	221	107	143	(CM)	57	60	63	97	73	309	287	283	311	291	142	164	153	220	185	225	133
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	31	53	98	118	45	275	266	150	159	( )
18	161	90	105	284	324	107	143	137	347	290	78	225	286	304	317	122	120	116	137	168	225	266	262	182	175
19	202	61	278	321	215	55	16	100	65	351	7	0	303	315	37	331	321	313	317	326	325	163	163	161	344
20	124	125	139	159	161	153	344	299	310	334	10	330	223	260	299	332	355	335	343	78	112	104	317	266	334
21	300	112	135	156	345	256	266	259	240	219	104	34	347	322	311	175	180	153	351	312	257	216	179	162	236
22	186	271	187	168	168	213	192	212	238	16	200	308	241	176	205	147	266	229	71	126	162	179	160	153	193
23	197	123	129	130	120	126	123	126	229	272	265	289	301	255	264	287	8	214	210	214	158	150	139	242	197
24	196	197	193	132	305	274	274	311	320	314	318	328	318	349	274	239	217	213	195	153	172	201	189	(CM)	247
25	160	181	194	213	217	211	160	150	210	176	197	193	197	174	201	174	185	178	172	154	145	155	157	146	179
26	164	171	184	186	176	143	149	188	210	206	201	212	211	220	238	206	231	232	226	223	208	123	125	203	194
27	271	244	120	225	4	133	165	119	227	343	269	131	207	204	21	339	252	249	229	218	211	199	213	45	219
28	132	215	179	205	197	183	164	147	126	156	223	208	193	222	204	221	204	201	203	204	223	309	303	306	201
29	246	302	320	84	130	150	159	128	191	240	253	281	292	302	317	330	323	52	102	126	163	215	287	231	242
30	319	24	41	253	179	214	217	219	235	225	235	245	246	255	242	236	234	240	225	213	215	209	204	202	231
31	203	202	201	194	202	281	249	251	233	228	236	227	299	274	265	253	236	242	239	217	251	192	199	302	236
PV	176	158	155	168	171	156	172	170	225	266	241	276	283	254	253	226	242	217	161	162	174	176	184	173	190

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	214	90	128	112	120	99	73	33	248	207	196	184	188	191	170	208	201	187	217	219	197	195	176	188	2.8
2	192	84	130	50	119	116	126	128	166	215	206	207	***	79	94	204	54	77	140	123	132	161	172	143	138	1.6
3	120	101	111	104	128	114	150	184	204	212	189	210	229	221	314	255	256	212	203	199	205	201	200	79	200	1.6
4	349	31	71	86	77	91	99	68	81	306	127	230	169	196	221	216	217	238	227	204	204	55	165	143	193	0.9
5	152	164	223	191	187	232	39	281	331	338	318	17	4	303	258	304	298	291	326	86	221	200	247	142	286	0.4
6	173	184	158	242	149	250	161	321	308	307	332	333	327	69	124	137	46	39	73	123	159	115	151	123	71	0.2
7	137	161	162	156	141	154	135	112	221	336	339	35	35	163	160	137	120	115	111	173	143	141	163	152	146	1.7
8	168	132	149	147	135	156	153	157	204	216	199	216	274	324	12	85	283	282	274	333	320	77	109	124	182	0.7
9	169	202	49	95	109	115	106	151	204	207	269	306	317	324	273	251	308	286	***	158	110	93	97	123	225	0.6
10	150	85	107	132	120	118	123	50	323	19	67	73	32	120	154	123	122	129	122	122	133	159	137	102	114	2.1
11	92	105	145	167	165	143	188	172	144	152	157	128	194	193	199	206	241	4	86	124	112	96	109	78	159	2.2
12	146	53	71	93	110	130	128	177	204	207	294	59	98	123	169	161	154	160	149	169	110	116	158	118	142	1.7
13	129	160	165	144	145	202	194	207	167	105	71	40	18	332	310	314	355	323	50	***	139	166	188	168	151	0.3
14	229	294	228	222	132	157	202	0	341	343	261	291	0	186	134	203	152	75	34	104	150	215	204	128	172	0.4
15	166	***	122	169	172	189	127	63	15	32	49	11	39	0	311	320	191	175	172	294	127	147	150	129	148	0.9
16	78	66	140	209	222	158	177	351	35	53	43	88	61	305	280	279	306	293	145	183	93	135	135	161	173	0.0
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	22	47	80	113	348	271	165	201	145	****	****
18	148	92	109	149	151	128	151	122	332	308	45	222	282	303	315	122	117	116	133	191	186	240	198	172	148	0.7
19	180	***	225	298	180	231	215	86	31	333	0	347	300	310	30	326	313	312	314	266	212	178	112	106	310	0.4
20	113	129	156	198	210	216	266	293	305	325	7	330	212	259	297	328	353	332	333	76	202	184	259	245	272	0.5
21	336	131	144	197	209	45	225	259	***	208	90	27	343	320	305	192	180	153	341	287	224	202	202	118	221	0.4
22	145	277	163	141	162	213	183	***	236	4	191	304	226	189	201	97	218	211	78	146	177	107	103	127	175	1.1
23	77	119	124	114	111	110	102	88	300	275	262	293	315	252	266	285	5	214	203	204	141	151	133	232	173	0.5
24	166	177	81	95	27	260	258	323	317	307	311	322	315	345	266	228	210	212	194	190	207	209	221	117	240	0.8
25	115	114	70	27	209	209	102	99	225	118	196	190	194	169	199	171	180	174	169	142	131	118	124	123	165	2.1
26	134	122	124	131	97	127	131	181	207	205	200	217	207	219	241	206	231	232	224	216	135	139	134	177	190	1.7
27	242	217	101	221	124	***	105	77	235	351	266	***	210	199	19	340	247	243	223	211	210	21	43	96	227	0.6
28	138	194	161	197	63	127	99	76	120	155	219	207	189	220	202	218	201	195	200	203	240	306	255	229	201	2.0
29	212	292	293	127	148	176	148	100	191	239	249	279	290	297	312	325	318	48	102	145	171	276	117	249	263	0.8
30	9	248	***	167	136	85	135	47	248	218	233	239	239	252	239	233	232	237	221	201	206	117	90	207	228	2.0
31	***	76	65	113	56	48	78	16	230	221	231	224	297	271	261	249	228	239	231	208	274	157	140	***	240	1.4
VD	147	140	133	139	136	143	145	127	219	231	222	239	246	233	233	225	221	201	168	183	171	158	157	144	181	
VV	1.1	0.9	1.0	0.9	1.1	1.1	0.9	0.7	0.7	0.9	1.1	0.9	0.9	1.2	1.3	1.3	1.0	1.0	1.1	1.4	1.3	1.3	1.3	1.3		0.8

TOTAL NUMBER OF OBSERVATIONS = 716

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	196	221	192	126	123	117	102	79	41	249	208	197	184	188	192	170	208	202	189	220	222	201	198	177	190	3.7
2	193	106	147	58	111	114	126	130	168	216	207	209	***	78	94	204	54	76	125	120	130	156	166	142	135	2.5
3	131	115	115	119	154	144	159	186	204	212	191	213	230	221	313	252	258	212	203	201	204	197	197	191	200	2.6
4	238	235	209	157	153	133	104	71	90	298	140	232	171	197	223	217	221	237	229	207	203	58	137	148	209	1.7
5	131	172	229	203	247	238	10	261	332	340	320	19	5	305	259	298	297	288	333	69	132	***	271	132	303	0.6
6	133	148	***	254	193	292	259	292	302	305	329	336	327	72	123	131	46	40	74	85	148	143	158	129	76	0.4
7	132	155	161	166	153	149	140	113	226	332	339	38	41	165	161	137	115	112	104	137	126	140	167	158	144	2.6
8	180	154	143	146	135	152	146	158	204	220	200	217	268	321	13	84	286	283	280	331	318	69	111	124	177	1.0
9	175	203	90	113	118	119	115	155	205	210	271	303	317	321	270	248	312	291	153	163	121	134	113	115	215	1.0
10	148	106	108	125	115	116	128	52	322	20	67	74	36	115	154	123	121	130	125	123	137	161	138	107	115	3.1
11	97	104	157	177	164	149	197	179	146	155	160	123	194	195	199	207	242	6	86	123	125	121	133	89	161	3.2
12	157	63	84	100	108	129	131	182	203	209	294	59	98	122	167	157	151	160	156	185	117	112	160	130	143	2.7
13	126	149	165	153	160	209	202	212	169	128	76	37	22	329	308	312	353	321	55	***	130	171	198	168	168	0.7
14	242	312	171	248	120	140	194	***	335	356	266	289	2	192	131	201	153	77	37	86	140	186	204	166	151	0.6
15	161	***	107	147	157	180	134	79	25	37	55	15	40	0	307	318	188	176	172	294	125	148	152	132	148	1.4
16	97	60	120	160	235	132	156	348	43	54	56	92	63	303	280	276	304	289	142	172	78	180	145	151	109	0.1
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	24	49	88	112	9	267	202	170	142	****	****
18	151	75	98	***	257	114	143	127	335	287	61	224	285	299	311	120	117	113	130	173	215	251	234	166	143	1.0
19	176	339	247	313	162	289	***	92	39	335	2	354	301	309	31	325	311	307	311	309	214	162	142	120	325	0.6
20	112	126	137	174	175	219	323	287	304	326	6	324	211	257	297	327	352	327	335	73	144	132	288	251	278	0.5
21	309	115	138	175	253	0	236	256	***	209	94	24	341	317	304	183	179	152	343	295	235	205	191	145	219	0.5
22	171	275	177	146	159	205	183	192	235	7	193	310	230	182	202	123	259	210	76	136	169	148	107	135	176	1.6
23	97	112	122	116	109	116	108	97	270	272	262	287	307	256	267	289	5	213	208	206	148	148	130	239	174	0.9
24	180	188	173	102	0	264	262	314	314	307	310	321	314	341	264	228	209	207	197	167	183	201	233	90	238	1.1
25	131	140	156	56	213	215	131	130	212	150	196	191	195	170	201	170	182	176	169	146	135	137	136	130	170	3.1
26	150	146	151	155	134	127	132	184	209	205	201	212	208	219	238	205	231	233	226	220	180	125	129	196	192	2.4
27	265	235	92	238	***	107	115	96	229	349	265	129	211	197	22	335	244	241	220	204	198	196	254	102	225	1.0
28	130	197	158	197	173	155	159	121	120	153	222	208	190	221	202	220	202	198	201	201	225	311	287	268	203	2.8
29	215	321	317	101	136	159	152	108	190	242	253	282	293	303	313	324	317	45	100	131	159	245	68	277	269	0.8
30	25	354	319	207	154	202	204	66	241	223	235	243	243	254	242	235	234	239	223	205	204	165	196	195	230	2.9
31	195	193	184	189	191	0	63	300	233	225	233	226	297	267	259	248	227	240	235	207	252	168	164	11	237	2.3
VD	154	146	139	145	142	145	148	147	214	230	224	240	246	230	229	225	219	199	169	177	170	161	162	151	181	
VV	1.5	1.3	1.4	1.4	1.6	1.6	1.4	1.1	1.0	1.2	1.4	1.2	1.1	1.6	1.7	1.7	1.2	1.4	1.6	2.1	2.0	2.0	1.9	1.7		1.2

TOTAL NUMBER OF OBSERVATIONS = 719

NOTE: **** - MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	194	207	251	122	135	124	108	93	53	247	208	199	186	191	194	173	209	202	191	222	225	205	200	178	194	4.4
2	194	151	177	56	105	113	130	137	174	217	210	211	***	86	101	201	57	79	108	115	128	152	158	147	137	3.1
3	151	139	133	154	183	173	174	191	206	212	194	215	232	222	313	257	257	215	204	210	217	203	204	196	205	3.5
4	202	205	200	199	213	212	***	76	141	303	148	235	176	199	224	217	222	236	231	217	214	193	315	174	214	2.7
5	157	156	129	169	266	122	290	222	337	346	338	20	10	309	263	303	304	294	347	69	115	133	284	163	301	0.5
6	90	136	143	267	237	336	241	281	305	313	336	340	337	73	127	130	49	45	78	79	149	153	164	146	91	0.6
7	138	148	158	161	158	150	148	120	229	336	348	47	46	167	165	138	114	116	103	121	118	142	174	169	147	3.3
8	190	174	150	154	147	163	153	167	205	221	201	219	262	326	17	87	296	293	281	328	322	39	113	127	186	1.3
9	184	205	169	139	117	134	136	158	207	214	270	307	320	326	276	254	310	288	160	169	137	162	141	117	221	1.4
10	156	98	106	127	118	117	136	68	331	24	74	81	44	110	157	130	127	136	134	129	142	166	144	125	123	3.4
11	111	117	171	192	169	161	207	186	153	162	167	130	196	197	201	207	242	10	90	126	143	158	165	122	169	4.0
12	173	79	97	118	120	141	147	188	203	211	300	59	98	125	168	157	153	163	162	192	134	122	166	168	152	3.4
13	139	152	170	157	172	216	208	220	174	157	91	51	28	339	314	319	353	332	69	39	134	180	217	179	176	0.9
14	221	253	314	288	117	145	205	231	333	3	285	297	5	194	135	201	159	81	40	81	136	172	199	351	151	0.5
15	165	320	101	151	167	107	131	129	45	44	63	27	45	1	315	325	189	177	173	287	127	151	157	145	148	1.7
16	135	50	104	124	221	107	143	***	57	60	63	97	73	309	287	283	311	291	142	164	153	220	185	225	123	0.2
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	31	53	98	118	45	275	266	150	159	****	****
18	161	90	105	284	324	107	143	137	347	290	78	225	286	304	317	122	120	116	137	168	225	266	262	182	154	1.0
19	202	61	278	321	215	55	16	100	65	351	7	0	303	315	37	331	321	313	317	326	325	163	163	161	340	0.8
20	124	125	139	159	161	153	344	299	310	334	10	330	223	260	299	332	355	335	343	78	112	104	317	266	294	0.5
21	300	112	135	156	345	256	266	259	240	219	104	34	347	322	311	175	180	153	351	312	257	216	179	162	243	0.6
22	186	271	187	168	168	213	192	212	238	16	200	308	241	176	205	147	266	229	71	126	162	179	160	153	187	1.9
23	197	123	129	130	120	126	123	126	229	272	265	289	301	255	264	287	8	214	210	214	158	150	139	242	200	1.3
24	196	197	193	132	305	274	274	311	320	314	318	328	318	349	274	239	217	213	195	153	172	201	189	***	244	1.5
25	160	181	194	213	217	211	160	150	210	176	197	193	197	174	201	174	185	178	172	154	145	155	157	146	179	3.9
26	164	171	184	186	176	143	149	188	210	206	201	212	211	220	238	206	231	232	226	223	208	123	125	203	198	3.1
27	271	244	120	225	4	133	165	119	227	343	269	131	207	204	21	339	252	249	229	218	211	199	213	45	230	1.3
28	132	215	179	205	197	183	164	147	126	156	223	208	193	222	204	221	204	201	203	204	223	309	303	306	206	3.4
29	246	302	320	84	130	150	159	128	191	240	253	281	292	302	317	330	323	52	102	126	163	215	287	231	261	0.8
30	319	24	41	253	179	214	217	219	235	225	235	245	246	255	242	236	234	240	225	213	215	209	204	202	231	3.8
31	203	202	201	194	202	281	249	251	233	228	236	227	299	274	265	253	236	242	239	217	251	192	199	302	239	3.2
VD	174	165	159	162	158	156	163	168	210	228	223	241	247	231	231	225	220	200	172	182	176	169	171	168	188	
VV	2.0	1.6	1.6	1.6	1.6	1.8	1.7	1.6	1.2	1.4	1.6	1.3	1.3	1.7	1.9	1.9	1.3	1.7	1.9	2.5	2.4	2.6	2.4	2.2		1.6

TOTAL NUMBER OF OBSERVATIONS = 725

NOTE: #### = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(CM)	14	16	10	4	6	9	12	30	15	19	21	19	19	21	18	13	13	7	8	8	8	9	7	13	30
2	21	15	14	8	8	8	14	7	15	14	14	16	(PF)	9	10	24	10	15	11	7	11	9	5	7	12	24
3	8	16	10	6	12	19	17	18	17	15	14	17	21	17	15	16	17	34	9	5	5	6	26	23	15	34
4	30	30	25	12	10	6	6	13	45	29	50	30	27	27	26	16	25	14	7	6	10	12	15	9	20	50
5	6	11	14	15	27	8	16	30	24	34	28	31	25	27	23	34	24	16	13	8	17	14	9	5	19	34
6	8	22	18	7	9	31	40	22	20	20	25	25	34	29	31	35	26	13	7	7	8	19	21	8	20	40
7	6	5	16	12	8	6	9	22	28	22	27	33	25	9	9	16	19	17	6	8	5	5	8	6	14	33
8	16	10	5	5	5	4	10	15	14	16	17	26	23	11	10	18	25	10	9	7	8	8	7	5	12	26
9	14	13	18	5	8	7	8	15	13	16	19	13	14	16	11	14	12	9	(CM)	8	8	8	5	7	11	19
10	7	10	4	5	6	5	21	19	9	14	14	17	21	19	9	12	9	9	8	6	9	10	8	9	11	21
11	7	10	9	7	12	8	17	8	7	12	16	21	12	13	15	10	12	11	7	6	8	14	8	9	11	21
12	22	21	16	15	10	7	7	9	12	17	19	9	12	10	18	7	10	15	12	33	9	10	21	6	14	33
13	8	8	7	12	13	28	5	6	12	13	9	10	14	19	15	11	9	21	12	(CM)	5	5	9	12	11	28
14	13	14	10	10	7	7	10	29	28	32	28	10	29	21	12	15	14	10	13	18	11	12	20	15	16	32
15	8	(CM)	11	15	9	17	12	13	14	29	37	26	22	29	28	13	14	9	6	13	9	7	8	12	16	37
16	9	10	8	24	14	18	14	16	20	29	28	32	18	9	8	12	12	11	7	7	16	22	12	7	15	32
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	12	17	8	12	18	18	13	9	( )	18
18	13	7	7	13	18	7	6	10	17	25	28	20	19	17	18	10	10	11	4	20	16	11	6	8	13	28
19	27	(CM)	13	16	9	20	21	13	23	18	30	42	36	27	17	14	15	17	10	6	7	17	10	7	18	42
20	4	7	13	13	27	16	11	13	12	21	29	24	10	13	17	16	19	14	8	13	11	22	19	6	15	29
21	7	4	5	20	19	12	13	19	(CM)	11	28	32	40	21	14	15	9	11	10	8	5	5	10	18	15	40
22	20	21	13	8	7	8	16	(CM)	17	21	19	11	11	9	8	17	16	19	12	6	13	18	5	5	13	21
23	20	6	6	7	6	6	7	12	35	40	26	27	28	13	9	9	15	12	7	5	14	7	7	12	14	40
24	10	10	27	10	24	14	7	11	16	16	21	24	24	31	15	9	8	8	24	7	5	8	27	22	16	31
25	19	15	19	30	29	27	11	12	32	17	11	13	10	9	15	12	12	9	9	11	9	13	13	9	15	32
26	12	13	10	14	18	5	7	16	11	16	20	36	27	25	37	19	13	9	7	9	17	8	15	13	16	37
27	12	5	8	13	18	(CM)	13	13	25	13	16	(CM)	22	30	33	21	13	8	6	5	13	35	19	14	16	35
28	5	5	8	12	16	16	14	12	17	19	30	14	16	12	13	11	9	9	8	7	9	6	10	7	12	30
29	6	10	12	11	6	9	23	13	26	17	18	17	10	12	16	15	13	21	6	5	15	27	18	19	14	27
30	17	16	(CM)	16	11	33	21	17	17	15	18	14	13	14	15	14	13	12	7	6	16	24	47	31	18	47
31	(CM)	24	19	31	39	20	21	21	24	17	28	19	12	11	15	13	10	12	6	4	15	7	33	(CM)	18	39
AV	13	13	12	13	14	13	14	15	20	20	23	22	20	18	17	15	14	13	9	9	11	13	14	11	15	
PK	30	30	27	31	39	33	40	30	45	40	50	42	40	31	37	35	26	34	24	33	18	35	47	31		50

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	26	18	23	7	3	3	6	9	29	13	17	18	18	18	20	16	12	12	6	7	6	7	9	7	13	29
2	26	19	16	8	5	4	14	6	15	12	12	15	(PF)	6	8	21	8	12	12	5	7	6	3	5	11	26
3	9	19	8	9	15	21	19	16	15	13	11	13	20	15	14	14	17	33	8	3	3	3	15	45	15	45
4	28	32	37	51	50	25	18	11	41	27	50	26	24	23	22	14	23	13	6	3	4	28	14	10	24	51
5	8	13	10	7	19	18	20	31	23	25	29	30	24	27	20	33	21	14	14	6	18	(CM)	10	9	19	33
6	13	16	(CM)	7	9	21	10	25	22	18	21	22	32	28	28	30	22	10	5	5	4	22	14	9	17	32
7	3	4	8	9	6	3	6	21	24	18	28	27	20	8	8	14	17	15	7	5	4	4	7	6	11	28
8	11	12	3	4	4	4	6	13	13	14	16	24	22	9	8	15	24	10	8	6	8	7	5	4	10	24
9	11	12	23	5	5	7	7	14	11	15	17	11	12	14	10	12	11	7	20	10	7	9	7	4	11	23
10	7	13	3	4	5	4	15	14	8	12	10	13	21	17	8	11	7	8	7	5	6	9	6	8	9	21
11	5	7	9	7	14	9	15	7	6	12	15	18	11	12	13	9	11	9	6	5	9	15	12	16	11	18
12	24	22	22	16	8	6	6	8	10	15	15	7	8	7	18	6	8	14	12	19	9	7	12	6	12	24
13	5	3	3	8	13	20	3	4	7	16	8	9	14	18	14	9	8	20	13	(CM)	3	4	8	9	10	20
14	13	13	10	14	6	5	3	(CM)	34	32	30	8	28	22	9	13	11	8	12	8	6	8	13	30	15	34
15	9	(CM)	9	4	9	16	11	14	16	26	33	24	25	29	23	11	12	8	6	14	7	6	7	11	14	33
16	18	9	6	23	19	17	14	20	20	19	30	29	16	8	6	10	10	11	5	6	16	33	14	16	16	33
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	10	13	6	13	15	18	12	10	( )	18
18	12	9	3	(CM)	26	6	4	9	17	30	25	15	18	14	18	7	8	9	3	21	15	11	8	7	13	30
19	14	13	17	13	6	20	(CM)	11	19	21	29	41	33	27	17	11	14	16	9	5	14	13	14	13	17	41
20	5	5	6	16	10	26	9	12	13	18	26	22	8	11	17	15	16	13	8	12	31	19	14	6	14	31
21	8	4	4	19	19	11	8	7	(CM)	8	26	29	33	20	14	13	6	8	12	8	6	4	7	14	13	33
22	23	11	9	6	5	4	10	30	21	20	17	9	9	7	4	21	15	9	10	4	17	21	8	7	12	30
23	28	5	5	6	4	4	4	13	43	32	25	29	24	12	9	7	14	9	5	4	10	6	6	15	13	43
24	12	8	29	16	25	10	5	10	15	15	17	19	21	31	12	9	6	6	22	7	6	9	23	21	15	31
25	10	26	39	39	26	26	13	9	26	23	10	11	9	8	13	11	11	7	9	10	8	15	16	10	16	39
26	12	16	15	17	22	5	7	15	9	14	19	33	25	21	26	17	11	8	5	7	16	6	7	11	14	33
27	8	7	10	12	(CM)	12	13	15	29	14	15	23	22	34	33	20	11	7	5	2	11	43	50	13	18	50
28	4	7	8	13	39	16	18	14	16	18	26	13	15	11	11	10	8	8	7	5	8	5	8	10	12	39
29	22	9	10	9	5	6	13	12	24	17	17	15	9	10	14	12	12	21	4	4	13	30	15	18	13	30
30	11	16	14	12	16	28	14	19	21	14	15	12	11	12	14	12	11	10	5	4	17	30	36	16	15	36
31	16	27	40	27	48	32	40	55	27	17	27	17	11	11	13	11	9	11	5	3	19	8	37	25	22	55
AV	13	13	14	13	15	13	11	15	20	18	21	19	19	16	15	14	12	12	8	7	10	14	13	13	14	
PK	28	32	40	51	50	32	40	55	43	32	50	41	33	34	33	33	24	33	22	21	31	43	50	45		55

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	16	27	15	13	7	5	5	10	30	13	14	15	17	16	18	15	10	10	4	5	5	6	7	5	12	30
2	12	26	20	8	4	2	13	6	14	11	12	14	(PF)	6	7	19	7	11	12	5	5	4	3	5	10	26
3	11	25	11	12	17	19	19	16	12	11	11	12	18	14	13	13	15	29	7	3	1	2	5	19	13	29
4	19	15	12	17	21	18	(CM)	9	41	26	50	25	22	21	18	12	19	12	5	2	2	28	36	16	19	50
5	15	12	13	6	26	16	10	29	21	23	27	26	23	28	19	32	17	14	14	5	8	12	10	9	17	32
6	15	6	15	8	8	20	5	22	21	17	20	19	25	22	25	27	18	9	6	4	3	12	8	11	14	27
7	5	3	5	7	4	2	3	18	25	15	24	27	18	7	6	13	16	13	8	5	4	4	6	6	10	27
8	9	9	4	4	4	6	5	12	12	13	15	20	18	7	8	15	26	8	8	6	7	9	5	3	10	26
9	9	10	29	7	15	14	8	14	9	15	15	11	11	13	9	10	10	6	20	5	11	5	11	3	11	29
10	5	14	17	4	4	3	10	16	9	11	10	12	20	18	6	10	7	7	6	5	5	8	5	8	9	20
11	5	8	8	8	13	10	14	5	5	10	14	17	10	10	12	8	10	10	6	4	10	18	12	28	11	28
12	24	31	30	18	10	10	6	7	9	14	13	8	5	6	18	5	6	8	11	12	10	7	8	6	12	31
13	4	3	3	4	10	13	3	3	5	12	8	9	13	16	13	8	8	16	15	10	3	4	8	7	8	16
14	7	19	10	5	4	7	5	41	40	37	38	7	25	26	9	11	11	9	12	6	4	6	16	18	16	41
15	10	12	8	4	9	17	5	11	17	29	35	22	26	27	21	10	12	6	4	11	7	5	5	10	13	35
16	20	15	7	18	16	8	12	(CM)	27	19	31	27	16	8	6	8	10	8	5	4	30	25	19	15	15	31
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	8	10	5	12	11	14	12	8	( )	14
18	11	11	4	19	11	5	3	8	22	38	23	14	16	13	21	6	7	8	3	18	12	6	7	8	12	38
19	18	9	31	11	12	14	14	9	30	26	28	35	31	25	19	11	13	15	9	4	16	13	9	17	17	35
20	12	5	5	8	6	28	8	13	14	16	26	22	7	10	15	13	17	21	7	10	11	14	14	6	13	28
21	12	5	3	12	22	15	5	5	22	6	23	28	32	18	13	14	5	7	12	8	7	4	8	8	12	32
22	17	8	8	11	9	5	8	25	21	18	15	9	10	6	3	25	15	12	17	5	14	24	20	6	13	25
23	25	5	7	7	5	6	5	16	39	30	19	24	26	10	8	6	15	7	3	3	9	4	9	10	12	39
24	14	7	25	19	16	7	5	9	14	13	16	17	19	37	12	9	5	4	22	8	7	7	21	(CM)	14	37
25	17	24	21	38	22	13	13	7	24	19	9	10	8	7	13	10	11	6	8	9	8	14	17	12	14	38
26	10	16	16	20	25	9	7	15	7	13	17	27	24	16	23	15	9	7	4	6	17	4	5	9	13	27
27	5	5	12	21	14	8	15	19	31	16	13	22	20	35	39	20	10	7	4	3	6	16	15	40	17	40
28	9	11	8	5	12	12	5	9	16	16	23	12	15	9	11	8	6	6	5	2	7	5	8	10	10	23
29	13	13	6	9	4	4	6	10	17	15	15	13	7	9	11	11	10	22	4	4	8	20	17	31	12	31
30	33	13	28	14	15	14	11	38	29	13	14	11	9	11	12	11	10	9	4	2	16	39	19	4	16	39
31	23	15	19	9	31	33	48	35	23	14	21	17	10	10	11	10	8	9	4	2	22	9	33	27	18	48
AV	14	13	13	12	13	11	10	15	20	18	20	18	17	15	14	13	11	11	8	6	9	11	12	12	13	
PK	33	31	31	38	31	33	48	41	41	38	50	35	32	37	39	32	26	29	22	18	30	39	36	40		50

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	17	17	16	16	15	16	18	21	26	29	30	31	32	32	32	31	31	29	27	24	23	22	18	14	24	32
2	14	14	15	14	13	13	13	14	17	21	22	24	(PF)	18	19	24	18	16	12	12	12	13	13	13	16	24
3	13	13	12	13	13	13	15	18	19	22	22	24	26	27	24	25	26	26	23	20	17	17	16	14	19	27
4	13	13	13	12	11	12	13	17	22	24	27	28	28	29	28	28	28	27	26	21	19	17	17	17	20	29
5	17	16	15	16	13	13	15	19	23	26	29	28	28	28	30	31	31	28	27	24	21	19	17	17	22	31
6	17	17	16	14	14	14	16	19	23	26	28	31	30	28	28	30	31	28	27	24	22	21	19	18	23	31
7	18	18	18	17	17	18	19	22	26	28	29	31	29	23	22	27	29	29	27	24	22	21	19	18	23	31
8	17	17	16	17	16	16	17	21	23	25	27	27	27	24	23	24	23	19	18	17	15	14	13	13	20	27
9	13	14	14	14	13	13	15	19	22	24	23	23	26	26	25	27	25	24	25	21	18	16	16	15	20	27
10	16	14	14	14	14	14	17	20	20	21	22	26	27	26	23	25	24	22	20	19	18	18	18	17	19	27
11	16	16	17	17	17	17	16	9	11	17	18	19	24	24	26	23	22	18	17	16	14	14	14	14	17	26
12	16	16	16	16	16	15	16	17	21	24	23	17	16	14	14	13	15	15	15	16	15	14	14	14	16	24
13	14	14	14	14	13	14	15	13	13	14	14	15	17	19	19	16	14	15	15	14	14	14	14	14	15	19
14	14	13	12	12	12	12	13	16	19	21	21	19	23	21	21	26	25	22	18	17	17	16	14	14	17	26
15	14	14	13	14	13	13	14	17	20	23	26	27	28	28	28	26	24	22	21	21	19	19	18	18	20	28
16	17	16	16	16	14	14	16	17	21	24	27	28	26	23	22	22	24	23	21	18	17	16	16	15	20	28
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	21	18	18	18	18	15	14	13	13	( )	21
18	13	12	13	13	12	13	15	18	20	23	24	27	22	27	27	24	24	26	24	22	19	18	18	18	20	27
19	17	16	15	14	14	14	15	18	22	26	27	29	31	27	28	29	28	28	27	24	22	19	19	18	22	31
20	18	18	18	17	17	16	16	19	22	26	29	29	22	26	29	30	29	29	25	22	21	20	19	18	22	30
21	18	18	18	18	17	16	17	17	18	21	25	28	28	29	28	26	23	24	23	21	19	18	17	18	21	29
22	19	18	18	18	18	17	17	18	22	23	26	24	19	18	17	16	16	16	16	16	17	16	14	14	18	26
23	14	14	13	13	13	13	14	18	23	26	27	28	29	26	25	24	25	26	23	21	19	19	19	17	20	29
24	15	16	16	14	14	14	13	14	17	19	22	24	27	28	24	23	22	22	21	18	17	16	16	15	19	28
25	16	16	15	14	15	16	16	16	18	14	18	19	18	15	18	18	19	18	16	14	13	13	12	12	16	19
26	12	12	12	11	11	11	12	16	18	20	21	23	25	25	25	25	23	22	21	19	18	16	15	14	18	25
27	13	12	12	12	11	11	12	16	21	20	18	16	20	23	26	25	24	23	21	18	17	16	14	14	17	26
28	14	14	14	13	12	13	14	17	21	23	24	24	26	24	24	23	21	22	21	18	17	15	14	13	18	26
29	12	11	10	10	9	9	11	14	19	23	24	23	22	23	24	25	23	24	21	18	16	15	14	14	17	25
30	14	13	14	13	14	14	14	17	22	24	26	23	23	28	28	27	27	26	23	19	18	17	16	16	20	28
31	15	14	14	14	14	14	14	18	23	25	26	27	24	24	26	27	24	26	23	19	17	17	17	17	20	27
AV	15	15	15	14	14	14	15	17	20	23	24	25	25	24	24	25	24	23	21	19	18	17	16	15	19	
PK	19	18	18	18	18	18	19	22	26	29	30	31	32	32	32	31	31	29	27	24	23	22	19	18		32
MN	12	11	10	10	9	9	11	9	11	14	14	15	16	14	14	13	14	15	12	12	12	13	12	12		

MONTHLY MINIMUM = 9

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	18	18	17	17	17	17	18	21	25	28	28	28	29	29	30	29	29	28	27	25	23	23	19	16	23	30
2	16	15	16	14	13	13	13	14	16	19	21	22	(PF)	18	19	23	18	17	13	12	13	13	14	14	16	23
3	13	13	13	13	14	14	15	17	18	20	21	22	23	24	23	23	24	24	23	21	19	19	18	16	19	24
4	15	14	14	13	13	13	14	17	21	23	25	26	26	27	27	26	27	26	25	23	22	19	18	18	21	27
5	18	17	16	17	16	14	16	18	22	24	27	27	27	27	28	29	29	28	26	24	22	21	19	18	22	29
6	18	18	17	15	15	15	17	19	22	24	27	28	28	28	27	28	29	28	27	26	24	22	20	19	23	29
7	19	19	19	18	18	19	19	22	24	26	27	28	28	23	22	26	28	28	27	24	24	22	21	19	23	28
8	18	18	17	18	17	17	17	19	22	23	24	26	25	23	23	23	23	19	18	17	15	14	13	13	19	26
9	14	16	15	14	14	14	16	18	21	23	23	23	25	26	24	25	24	24	24	22	18	18	17	16	20	26
10	17	16	16	16	15	15	17	19	19	19	21	24	26	25	22	24	23	22	21	19	18	19	18	17	20	26
11	17	17	18	18	18	18	16	14	14	16	17	18	22	23	24	22	22	18	16	16	15	14	15	16	18	24
12	16	16	17	17	16	16	16	17	19	22	22	18	15	15	16	14	15	16	16	17	16	15	16	16	17	22
13	16	16	16	15	14	14	16	14	13	14	14	14	16	18	18	16	14	14	14	14	14	14	14	14	15	18
14	14	13	13	13	12	13	14	16	18	19	21	19	22	21	21	23	23	22	18	18	17	17	17	15	17	23
15	15	16	15	16	15	14	14	17	20	23	24	26	26	27	27	25	24	23	22	22	20	19	18	18	20	27
16	18	17	17	17	16	14	16	17	21	23	25	26	25	23	21	22	24	23	21	20	18	17	17	17	20	26
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	21	19	18	18	18	16	14	14	14	( )	21
18	14	13	14	15	14	14	15	17	19	22	23	24	21	26	26	24	23	24	24	23	21	20	19	18	20	26
19	18	17	17	16	14	15	16	18	21	24	26	27	28	27	27	28	28	27	26	24	23	22	20	20	22	28
20	19	18	19	18	18	17	17	19	21	24	27	28	22	25	28	28	28	28	25	23	22	21	20	19	22	28
21	19	18	19	18	17	17	17	18	18	19	23	26	27	28	27	25	23	23	23	21	20	20	19	19	21	28
22	19	19	19	19	18	18	18	18	21	22	24	23	18	19	19	17	17	17	17	17	18	17	16	16	19	24
23	16	15	15	15	14	14	15	17	22	24	26	27	27	25	24	24	24	25	23	22	21	20	19	18	21	27
24	17	17	17	16	16	14	13	14	16	18	21	23	25	26	24	22	22	22	21	19	19	18	17	17	19	26
25	17	17	16	16	16	16	16	16	17	15	18	18	18	16	17	18	18	17	16	15	14	13	13	13	16	18
26	13	12	12	12	12	12	12	15	17	18	19	21	22	23	23	23	23	22	21	19	18	17	16	14	17	23
27	14	13	12	12	11	11	13	16	19	19	19	17	19	22	24	24	23	22	21	19	19	17	16	15	17	24
28	16	15	15	16	14	14	14	17	21	22	23	23	24	23	23	23	21	22	21	19	18	15	14	13	19	24
29	12	12	10	11	11	11	12	13	18	21	23	23	22	23	23	24	23	23	21	19	18	16	16	16	17	24
30	16	15	15	14	15	16	16	17	21	23	24	23	22	26	26	26	26	24	23	21	19	18	17	18	20	26
31	16	16	16	16	16	15	16	18	22	23	24	24	24	23	24	25	24	24	23	21	19	18	17	17	20	25
AV	16	16	16	15	15	15	15	17	20	21	23	23	23	24	24	24	23	23	21	20	19	18	17	16	19	
PK	19	19	19	19	18	19	19	22	25	28	28	28	29	29	30	29	29	28	27	26	24	23	21	20		30
MN	12	12	10	11	11	11	12	13	13	14	14	14	15	15	16	14	14	14	13	12	13	13	13	13		

MONTHLY MINIMUM = 10

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	19	19	18	17	18	18	19	21	26	27	28	29	29	29	30	30	29	28	27	25	23	22	19	14	24	30
2	15	14	16	14	13	13	13	14	17	19	21	22	(PF)	19	19	23	18	16	12	12	13	13	15	14	16	23
3	13	13	13	14	14	14	15	17	18	20	21	22	23	24	23	23	24	24	23	21	20	19	19	17	19	24
4	16	16	16	14	14	14	15	18	21	24	26	25	27	27	26	26	26	26	25	23	22	20	18	18	21	27
5	18	17	17	17	16	14	17	19	23	25	28	28	27	27	28	29	29	28	26	24	22	21	19	18	22	29
6	18	19	18	16	16	15	17	19	22	25	28	29	29	28	27	28	30	28	27	26	24	22	21	20	23	30
7	19	20	19	18	18	19	19	22	24	27	28	30	29	23	23	26	28	28	27	24	24	22	21	19	23	30
8	18	18	18	18	17	17	18	19	22	23	25	25	25	23	22	23	23	19	18	17	15	14	13	13	19	25
9	14	17	16	15	14	14	16	18	22	23	23	23	25	26	24	24	24	23	24	22	19	18	18	17	20	26
10	18	17	16	16	16	16	18	20	19	21	22	24	26	24	22	24	23	22	20	19	18	19	19	18	20	26
11	17	18	18	18	18	18	16	13	14	17	17	18	23	23	24	22	21	18	16	16	15	15	16	16	18	24
12	16	16	17	17	16	16	17	17	20	22	22	17	16	15	14	14	16	16	16	17	16	16	16	16	17	22
13	16	16	16	16	15	15	16	14	13	13	14	15	18	18	18	15	13	14	14	14	14	14	14	14	15	18
14	14	14	13	13	12	13	14	16	18	21	20	19	23	22	21	23	24	22	18	18	18	18	18	16	18	24
15	16	16	15	16	16	14	15	18	21	23	25	27	28	27	27	25	24	23	22	22	20	19	18	18	21	28
16	18	17	17	17	16	14	17	18	22	24	26	26	26	23	21	22	24	22	21	20	19	18	17	17	20	26
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	21	19	19	18	18	16	14	15	15	( )	21
18	16	14	15	16	14	14	16	18	20	22	23	24	21	26	26	24	23	24	24	23	21	20	19	19	20	26
19	19	17	17	16	15	15	16	19	22	25	27	28	28	27	28	28	28	27	26	24	23	22	21	20	22	28
20	19	19	19	19	19	18	18	19	22	25	29	29	23	25	28	29	28	28	24	23	22	21	21	19	23	29
21	19	18	19	19	18	17	17	18	18	20	24	26	28	29	27	26	23	23	23	21	20	19	19	20	21	29
22	20	19	19	19	18	18	18	18	21	23	24	23	18	19	19	17	17	17	18	18	18	17	16	16	19	24
23	17	16	16	16	15	15	16	18	22	23	25	27	28	25	24	24	25	26	23	22	21	20	19	18	21	28
24	17	17	17	16	16	15	13	14	16	19	21	23	26	27	24	22	22	22	21	19	18	18	17	17	19	27
25	17	17	17	16	16	16	16	17	17	14	18	19	18	14	17	18	18	17	16	14	13	13	13	13	16	19
26	13	12	12	12	12	12	13	15	17	18	19	21	22	22	23	23	23	22	21	19	18	17	16	15	17	23
27	14	13	13	12	12	12	13	16	19	19	19	16	19	22	24	24	23	22	21	19	19	18	17	16	18	24
28	15	15	16	16	16	15	16	18	21	22	23	23	24	23	23	23	21	22	21	19	18	15	14	13	19	24
29	12	12	11	11	11	12	13	14	18	21	22	23	22	23	23	23	23	23	21	19	18	17	16	16	18	23
30	16	16	15	15	16	16	17	18	22	23	24	22	22	25	26	26	25	24	23	22	20	18	17	19	20	26
31	17	17	17	17	16	16	16	19	22	23	24	24	24	23	24	25	24	24	23	22	19	18	18	18	20	25
AV	17	16	16	16	15	15	16	18	20	22	23	24	24	24	24	24	23	22	21	20	19	18	17	17	20	
PK	20	20	19	19	19	19	19	22	26	27	29	30	29	29	30	30	30	28	27	26	24	22	21	20		30
MN	12	12	11	11	11	12	13	13	13	13	14	15	16	14	14	14	13	14	12	12	13	13	13	13		

MONTHLY MINIMUM = 11

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	206	178	122	150	272	233	144	6	-22	-167	-139	-106	-117	-94	-133	-89	-89	-67	-22	-28	-33	-39	33	11	9	272
2	-17	-17	28	-44	6	33	-6	-17	-44	-83	-78	-122	(PF)	17	-17	-50	-22	-67	-106	-61	-17	33	111	56	-21	111
3	28	17	33	89	89	33	-33	-56	-61	-89	-56	-100	-144	-156	-78	-117	-117	-117	-56	28	117	67	139	100	-18	139
4	161	139	72	44	194	233	133	28	-39	-39	-78	-194	-106	-128	-172	-128	-100	-94	-44	117	183	67	-39	-194	1	233
5	-206	-333	-372	-28	144	72	72	72	0	-11	-61	-22	-22	-72	-144	-144	-72	-78	-56	-39	6	72	111	89	-43	144
6	39	122	206	167	111	22	83	44	-6	-17	-22	6	-56	-39	-56	-67	-22	-56	-44	39	128	78	78	111	35	206
7	144	133	122	94	133	117	17	-39	-111	-39	-22	6	6	-194	22	-133	-128	-67	-22	-39	-122	56	22	11	-1	144
8	44	44	78	44	39	44	6	-50	-83	-133	-128	-244	-133	-578	-161	-183	-183	-67	-78	-44	-56	-72	-33	28	-79	78
9	44	194	106	78	72	106	89	-11	-44	-94	-83	-50	-67	-67	-83	-128	-67	-56	-50	28	89	178	217	183	24	217
10	172	189	144	111	172	178	122	17	-61	22	-44	-72	-6	-117	-44	-61	-56	-61	-33	-6	17	11	17	28	27	189
11	100	111	-17	-17	0	28	-22	39	28	-28	-44	-56	-56	-56	-94	-67	-78	-78	-67	-28	0	28	61	78	-10	111
12	-56	-61	-144	-89	-78	0	17	-22	-61	-150	-150	-94	0	6	-6	50	44	11	56	67	83	83	78	128	-12	128
13	78	139	89	111	117	78	28	17	-22	-67	-56	-22	89	17	-50	-100	-72	-56	-44	-56	-33	6	0	-17	7	139
14	22	-6	-17	11	17	39	56	28	-44	6	-33	-33	56	-44	-33	-89	-61	-22	-44	17	56	178	294	128	20	294
15	39	-294	0	83	111	78	-28	28	67	67	-33	22	83	-33	-144	-56	-56	0	17	-39	-156	-72	-22	-17	-15	111
16	-11	-28	50	39	50	17	50	128	44	0	-39	-89	-100	-128	-156	-72	-72	-83	-33	83	111	72	106	111	2	128
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-100	-144	33	-111	-122	-22	6	128	133	( )	133
18	250	217	222	178	222	106	56	6	-33	-50	-50	-150	-178	-89	-94	-94	-206	-44	-11	33	89	72	33	22	21	250
19	117	-189	78	-33	50	-61	50	133	11	11	39	22	-89	-67	28	-72	-72	-72	-50	-28	11	139	133	150	10	150
20	156	128	150	200	239	156	117	100	11	0	89	17	83	6	-72	-67	-44	-44	-22	-17	72	67	56	67	60	239
21	6	11	33	72	39	11	-44	-17	-17	-17	-61	-78	-17	-33	-72	-33	-22	-39	-28	-44	17	89	167	144	3	167
22	33	78	28	17	28	89	78	-6	-56	-22	-100	-100	-22	111	161	78	61	83	128	106	133	78	100	128	50	161
23	183	144	156	189	172	167	150	56	-50	-100	-106	-50	-56	-83	-44	-44	-17	-33	6	44	44	44	22	61	36	189
24	156	111	83	83	50	61	-17	-22	-22	6	-17	-11	-28	-28	-72	-56	-44	-33	-22	-11	-28	233	156	94	26	233
25	78	83	78	94	44	-28	0	11	-117	28	-6	-78	-67	-67	-89	-72	-78	-122	-67	-78	-39	-11	-6	-6	-21	94
26	-6	0	11	44	22	33	33	-78	-56	-111	-267	-194	-178	-172	-133	-117	-89	-33	-22	-72	-56	44	-28	44	-57	44
27	56	78	39	22	78	106	-17	-17	-83	-311	-89	-22	-22	-33	-33	0	-83	-67	0	117	233	156	167	128	17	233
28	72	50	78	206	239	156	122	128	-33	-67	-117	-106	-100	-128	-100	-83	-28	-56	-72	11	106	-33	-22	11	10	239
29	6	17	44	11	50	133	133	17	-194	-467	-356	-144	-183	-161	-178	-89	-122	-56	-17	78	100	122	106	106	-44	133
30	167	150	72	122	89	178	178	-17	-94	-156	-189	-67	28	-139	-156	-139	-117	-78	17	133	189	89	122	300	28	300
31	189	272	194	189	122	133	133	72	-89	-156	-172	-156	-83	-67	-100	-144	-72	-78	17	178	172	78	50	72	31	272
AV	75	56	59	75	96	85	57	19	-43	-74	-82	-76	-51	-87	-77	-80	-72	-51	-28	12	45	62	76	74	3	
PK	250	272	222	206	272	233	178	133	67	67	89	22	89	111	161	78	61	83	128	178	233	233	294	300		300
MN	-206	-333	-372	-89	-78	-61	-44	-78	-194	-467	-356	-244	-183	-578	-178	-183	-206	-122	-111	-122	-156	-72	-39	-194		

MONTHLY MINIMUM = -578

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
AUG. 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	30	33	37	39	39	40	38	33	26	18	13	13	12	11	10	9	8	8	8	12	17	21	47	86	25	86
2	73	80	84	83	90	92	93	93	93	59	49	42	38	79	59	38	50	78	94	94	94	94	86	86	76	94
3	86	86	86	86	86	86	82	61	59	49	45	41	33	24	24	25	24	23	23	32	49	56	62	67	54	86
4	72	72	75	78	79	79	77	45	34	20	18	16	15	14	14	14	14	14	14	19	24	25	28	30	37	79
5	34	36	40	46	52	54	54	39	31	25	17	16	16	16	16	16	15	15	16	20	32	34	41	41	30	54
6	44	45	45	53	51	51	50	39	33	27	22	19	18	17	17	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	27	35	40	35	53
7	43	43	43	49	55	54	50	41	34	27	24	22	21	35	34	24	20	(RF)	(RF)	(RF)	32	32	36	46	36	55
8	54	60	63	63	65	67	65	54	45	39	35	32	31	35	48	42	39	69	69	80	87	88	93	93	59	93
9	93	67	79	82	83	83	83	68	45	40	38	37	31	23	20	19	18	20	22	27	38	47	56	58	49	93
10	58	56	61	61	61	62	62	51	44	39	38	33	27	28	38	33	35	32	36	36	36	40	40	42	44	62
11	48	50	49	49	48	49	49	90	90	78	67	65	40	34	31	29	35	44	59	62	73	76	79	79	57	90
12	68	68	68	68	70	72	73	64	46	39	34	76	87	90	85	87	77	72	66	61	67	71	67	72	69	90
13	71	75	75	77	82	80	70	90	92	94	94	94	79	78	76	90	93	93	93	94	94	94	93	93	86	94
14	93	93	94	94	94	94	94	81	69	54	47	63	45	38	65	42	38	38	72	87	88	89	93	92	73	94
15	81	81	81	80	82	82	83	70	62	46	27	23	21	18	20	21	21	21	24	22	29	39	42	43	47	83
16	47	53	58	58	62	68	69	65	56	41	23	21	19	20	40	49	42	38	37	45	49	58	63	68	48	69
17	79	79	82	82	82	84	84	75	59	56	40	39	34	27	26	33	67	69	79	69	93	94	94	89	67	94
18	89	89	90	86	87	88	88	67	65	47	39	32	29	32	26	27	31	32	32	35	46	46	50	53	54	90
19	53	58	60	62	71	71	73	60	47	39	26	23	20	19	20	20	20	20	21	22	36	43	45	48	41	73
20	50	50	50	59	62	64	67	57	49	39	32	21	40	41	29	23	20	19	21	29	40	46	50	56	42	67
21	56	60	60	60	64	70	71	74	74	64	49	38	32	25	26	26	32	36	37	39	46	54	58	59	50	74
22	52	56	56	55	57	65	74	74	60	56	44	41	72	72	69	90	91	91	88	78	63	63	70	75	67	91
23	76	78	79	79	80	83	84	85	69	49	33	30	24	22	31	30	21	19	26	35	39	42	44	46	50	85
24	81	75	77	79	82	86	84	78	64	55	48	43	35	21	18	33	37	37	38	48	55	58	59	59	56	86
25	59	61	65	67	64	63	65	69	69	94	69	62	61	90	72	65	60	63	66	76	87	91	92	93	72	94
26	93	93	93	94	94	95	95	66	55	47	44	40	35	30	25	25	25	26	31	35	41	48	57	64	56	95
27	74	77	79	87	88	88	70	48	48	76	64	52	39	24	24	30	32	40	56	62	62	66	67	67	59	88
28	67	65	70	75	81	86	86	65	49	41	35	33	26	30	28	30	55	45	44	57	60	71	79	88	57	88
29	94	94	95	95	95	95	86	68	50	38	31	27	32	27	27	23	23	24	25	40	48	51	56	58	54	95
30	58	60	60	62	66	66	67	67	33	27	23	55	21	17	16	16	16	17	20	24	27	31	36	38	38	67
31	49	58	64	65	65	65	58	36	27	23	21	20	20	19	17	18	18	20	25	31	31	31	31	32	35	65
AV	65	66	68	70	72	74	72	64	54	47	38	38	34	34	34	34	36	39	43	47	53	56	60	63	52	
PK	94	94	95	95	95	95	95	93	93	94	94	94	87	90	85	90	93	93	94	94	94	94	94	93		95
MN	30	33	37	39	39	40	38	33	26	18	13	13	12	11	10	9	8	8	8	12	17	21	28	30		

MONTHLY MINIMUM = 8

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	1	1	1	1	1	2	15	32	73	81	70	79	82	75	68	55	39	21	4	1	1	1	1	1	702	82
2	1	1	1	1	1	1	2	18	31	54	57	43	0	17	19	32	8	7	1	1	1	1	1	1	297	57
3	1	1	1	1	1	2	16	27	41	67	60	72	93	73	41	44	37	25	8	1	1	1	1	1	616	93
4	1	1	1	1	1	2	15	32	89	103	80	75	82	71	59	40	40	23	8	1	0	1	1	1	724	103
5	1	1	1	1	1	3	16	35	58	59	70	59	39	36	58	57	42	19	6	0	0	1	1	1	562	70
6	1	1	1	1	1	3	14	29	46	61	70	76	47	22	25	43	35	12	7	1	1	1	1	1	496	76
7	1	1	1	1	1	2	14	31	47	60	70	77	37	9	10	46	32	18	6	0	1	1	1	1	466	77
8	1	1	1	1	1	3	13	28	45	56	71	57	31	27	20	31	5	5	2	1	1	1	1	1	401	71
9	1	1	1	1	1	2	14	30	46	50	44	34	62	37	23	47	14	11	8	1	1	1	1	1	430	62
10	1	1	1	1	1	2	15	39	41	42	50	77	48	35	33	43	33	10	4	1	1	1	1	1	481	77
11	1	1	1	1	1	1	1	2	10	23	14	32	74	62	52	16	10	8	4	1	1	1	1	1	320	74
12	1	1	1	1	1	2	8	15	44	56	27	12	25	13	3	6	9	4	2	1	1	1	1	1	240	56
13	1	1	1	1	1	2	4	4	12	11	13	28	51	37	25	10	9	13	4	1	1	1	1	1	235	51
14	2	1	1	1	1	3	14	31	83	85	42	31	40	23	63	53	32	4	2	1	1	1	1	1	515	85
15	1	1	1	1	1	2	12	32	53	94	68	74	73	57	34	19	7	3	2	1	1	1	1	1	535	94
16	1	1	1	1	1	2	12	35	98	95	66	49	41	17	11	41	38	11	3	1	1	1	1	1	527	98
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	9	4	2	1	1	1	1	1	29	9
18	1	1	1	1	1	2	11	18	31	65	64	72	37	62	26	17	17	19	5	1	1	1	1	1	458	72
19	1	1	1	1	1	2	12	29	59	62	71	72	64	25	53	49	34	19	7	0	1	1	1	1	563	72
20	1	1	1	1	1	2	11	29	53	68	89	30	6	38	64	43	29	14	4	1	1	1	1	1	485	89
21	1	1	1	1	1	2	5	9	13	19	22	1	62	61	44	14	7	10	4	1	1	1	1	1	281	62
22	1	1	1	1	1	1	7	13	27	29	61	25	7	7	5	2	2	2	2	1	1	1	1	1	199	61
23	1	1	1	1	1	2	10	25	41	54	90	(MT)	(MT)	16	16	21	26	16	4	1	1	1	1	1	332	90
24	1	1	1	1	1	2	9	21	41	54	65	72	75	56	16	14	14	9	3	1	1	1	1	1	463	75
25	1	1	1	1	1	2	5	10	11	13	35	34	23	19	35	27	31	14	2	1	1	1	1	1	272	35
26	1	1	1	1	1	2	11	26	39	42	56	55	63	55	37	34	21	6	2	1	1	1	1	1	458	63
27	1	1	1	1	1	2	10	25	39	12	25	25	31	69	52	31	26	14	3	1	1	1	1	1	374	69
28	1	1	1	1	1	2	10	23	38	52	44	52	64	34	37	20	25	12	4	1	1	1	1	1	427	64
29	1	1	1	1	1	1	9	25	40	54	44	38	41	61	59	38	25	14	2	1	1	1	1	1	460	61
30	1	1	1	1	1	1	5	23	41	45	64	41	77	71	61	47	33	16	2	1	1	1	1	1	538	77
31	1	1	1	1	1	1	9	25	41	55	55	53	38	22	44	39	14	17	3	1	1	1	1	1	427	55
TL	28	29	31	29	28	61	310	719	1331	1619	1658	1442	1412	1207	1095	986	706	381	121	22	23	23	25	28	13313	
PK	2	1	1	1	1	3	16	39	98	103	90	79	93	75	68	57	42	25	8	1	1	1	1	1		103

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER A823
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	793	794	794	794	793	793	794	793	793	792	792	791	791	790	790	788	788	788	787	788	789	789	790	791	791	794
2	792	791	790	790	791	791	791	791	791	791	790	790	(PF)	789	789	788	789	789	793	792	793	792	792	792	791	793
3	793	792	792	792	792	792	793	792	793	792	792	791	791	790	790	790	790	790	790	791	791	792	792	793	792	793
4	794	793	793	793	793	793	794	794	793	793	794	791	792	792	791	791	791	791	792	792	793	794	794	795	793	795
5	795	795	795	796	796	796	796	797	797	797	796	795	795	795	795	795	795	794	794	794	795	796	796	796	795	797
6	798	796	796	797	798	798	798	798	797	797	797	796	795	795	796	794	794	795	794	794	796	796	796	796	796	798
7	797	796	797	797	797	797	798	797	798	798	796	795	795	795	796	795	795	795	794	795	796	796	796	797	796	798
8	798	797	797	797	798	797	798	798	797	797	796	796	795	794	795	795	795	795	796	796	797	797	797	796	796	798
9	797	795	795	796	796	796	797	795	794	795	794	793	794	793	792	791	792	792	792	792	793	793	793	794	794	797
10	794	794	793	794	794	794	794	793	794	794	794	793	793	791	792	791	792	791	792	792	793	793	793	792	793	794
11	794	793	794	793	794	794	795	794	795	795	794	794	793	793	791	791	792	792	793	793	793	792	793	793	793	795
12	793	792	793	793	794	794	794	793	793	793	794	794	795	795	795	794	794	794	795	795	796	794	794	794	794	796
13	795	794	794	793	793	794	794	795	795	795	794	795	793	791	790	791	792	791	791	792	791	792	792	792	793	795
14	792	792	792	792	792	792	793	793	793	792	793	792	791	792	791	791	791	791	792	792	792	792	793	793	792	793
15	794	793	793	793	793	794	794	794	794	794	794	793	793	793	792	792	793	792	793	792	793	794	795	794	793	795
16	794	793	794	793	794	795	795	795	795	795	795	795	794	794	795	795	795	795	796	795	795	796	796	797	795	797
17	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	796	796	796	797	798	799	799	799	798	( )	799
18	798	798	797	798	798	798	798	798	798	799	799	799	795	798	797	793	792	792	792	793	794	794	795	795	796	799
19	795	795	795	795	796	796	796	796	796	796	795	794	794	794	794	794	793	793	793	794	795	796	797	797	795	797
20	797	798	797	798	798	799	799	799	798	797	796	796	797	796	795	795	796	795	795	796	797	797	798	798	797	799
21	798	798	797	798	798	798	798	799	799	798	798	797	795	795	794	794	793	794	794	795	796	796	796	796	796	799
22	796	796	795	795	795	796	795	796	795	795	795	793	793	793	794	794	795	794	794	794	793	793	794	794	794	796
23	794	793	793	793	793	794	794	795	796	797	797	796	795	795	790	790	790	791	792	792	793	793	794	794	794	797
24	794	794	794	794	795	795	796	796	796	796	795	794	793	792	792	792	793	793	793	794	794	794	794	795	794	796
25	795	794	794	794	794	795	795	795	795	795	795	794	794	794	793	794	793	793	793	793	794	794	794	794	794	795
26	794	794	794	793	794	794	795	795	794	794	793	793	793	792	791	791	791	792	792	794	793	794	794	794	793	795
27	795	794	794	795	795	795	795	795	794	795	795	795	795	794	793	793	792	793	793	794	795	795	795	796	794	796
28	796	795	795	795	795	795	796	796	795	795	794	793	793	793	792	793	793	793	793	794	794	796	796	795	794	796
29	796	795	796	796	795	796	796	796	796	795	794	794	793	794	794	793	793	793	793	794	794	794	793	795	795	796
30	795	794	794	794	793	794	794	793	792	793	793	792	793	792	792	791	791	792	792	793	794	794	794	795	793	795
31	795	794	794	794	795	795	795	796	796	795	795	794	794	794	794	794	794	794	795	796	796	796	796	797	795	797
AV	795	794	794	795	795	795	795	795	795	795	795	794	794	793	793	793	793	793	793	794	794	794	795	795	794	
PK	798	798	797	798	798	799	799	799	799	799	799	799	797	798	797	796	796	796	797	798	799	799	799	798		799
MN	792	791	790	790	791	791	791	791	791	791	790	790	791	789	789	788	788	788	787	788	789	789	790	791		

MONTHLY MINIMUM = 787

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1					10	(TR)	(TR)																13		23	13
2													38					63	30	3					135	63
3																									( )	
4																									( )	
5																									( )	
6																									( )	
7																									( )	
8																						10	3		13	10
9	8				(TR)	(TR)	(TR)	(TR)	(TR)																8	8
10																									( )	
11									23																23	23
12													13	38	99	25	18								193	99
13									8	3	3	8				28	20						(TR)	(TR)	69	28
14								3			(TR)	(TR)			(TR)	(TR)	3			15					20	15
15																									( )	
16																									( )	
17																			10		33	3			46	33
18									(TR)																( )	
19								(TR)																	( )	
20																									( )	
21																									( )	
22															3		5	(TR)	(TR)						8	5
23							(TR)	(TR)	(TR)																( )	
24	13														(TR)										13	13
25										13	15	(TR)	5		(TR)		(TR)								33	15
26								(TR)	(TR)	(TR)	(TR)														( )	
27							(TR)	3	(TR)	(TR)		18	8	(TR)	(TR)										28	18
28							(TR)	(TR)										10	(TR)			(TR)			10	10
29			(TR)	3	(TR)			(TR)								(TR)									3	3
30												13		(TR)	(TR)				(TR)	(TR)	3				15	13
31																									( )	
TL	20	( )	( )	3	10	( )	( )	5	30	15	18	38	63	38	102	53	46	74	41	18	36	13	15	( )	638	
PK	13			3	10			3	23	13	15	18	38	38	99	28	20	63	30	15	33	10	13			99

PRECIPITATION
CM*100

CB TRACT
MRI AD28
AUG 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																							5	5	10
2				8	5	5	(TR)	(TR)	3																20
3							3																		3
4			3																		3	(RF)	(RF)	(RF)	5
5	(RF)	(RF)	(RF)				(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)				(RF)	(RF)	(RF)					( )
6																(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)			
7					(RF)	(RF)				(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)		( )
8							(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)									13			13
9	3					3	3																		8
10																									
11									13																13
12								(TR)	(TR)	(TR)	(TR)	15	51	76	38	13									193
13							5	5	(TR)	15	(TR)	(TR)			36	51	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)			112
14																		5	(TR)						5
15																									
16															3										3
17																			13		38	8			58
18							(TR)	(TR)	3																3
19																									
20																									
21																									
22													(TR)	(TR)	5	(TR)	5	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	3	13
23	(TR)	(TR)	(TR)	(TR)	3	(TR)	(TR)	(TR)	(TR)	3														20	25
24																									
25									15																15
26																									
27											(TR)	(TR)	(TR)	(TR)											
28																									
29	(TR)	5	(TR)																						5
30					(TR)	(TR)	(TR)	(TR)																	
31																									
TL	3	5	3	8	8	8	10	5	33	18		15	51	76	81	63	5	5	13		41	20	5	28	( )

```
STABILITY CLASS USING DT/DZ                                      CB-TRACT
DT 60-10M                                                        TRAILER AA23
WS 10M                                                            AUG  1982
                                                                 OCCIDENTAL OIL SHALE, INC.

                                        HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  AVE

  1  ( )    F    F    F    F    F    F    E    E    B    B    B    B    B    B    B    B    D    E    D    D    D    D    D    D
  2    E    E    E    D    E    E    E    E    D    C    C    B  ( )    E    E    D    E    D    A    D    E    E    E    E    D
  3    E    E    E    F    F    E    D    D    D    B    D    B    B    B    C    B    B    B    D    E    F    E    F    F    D
  4    F    F    E    E    F    F    F    E    D    D    C    B    B    B    B    B    B    B    D    F    F    E    D    A    D
  5    A    A    A    D    F    E    E    E    E    E    D    E    E    D    A    A    D    C    D    D    E    E    F    F    D
  6    E    F    F    F    F    E    F    E    E    E    E    E    D    D    D    D    E    D    D    E    F    F    F    F    E
  7    F    E    F    F    F    E    E    D    A    D    E    E    E    D    E    B    A    D    E    D    B    E    E    E    D
  8    E    E    F    E    E    E    E    D    C    B    B    B    A    B    B    A    A    D    C    D    D    D    D    E    D
  9    E    E    F    F    E    F    F    E    D    B    C    D    D    D    C    B    D    D  ( )    E    F    F    F    F    E
 10    F    F    F    F    F    F    F    E    D    E    D    D    E    A    D    D    D    D    D    E    E    E    E    E    E
 11    F    F    E    E    E    E    E    E    E    D    D    D    D    D    B    D    C    C    D    D    E    E    E    F    E
 12    D    D    A    B    C    E    E    E    D    B    B    B    E    E    E    D    E    E    E    E    F    F    F    F    D
 13    F    F    F    F    F    F    E    E    E    D    D    E    F    E    D    B    D    D    D  ( )    D    E    E    E    E
 14    E    E    E    E    E    E    E    E    D    E    D    D    E    D    D    B    D    E    D    E    E    F    F    F    E
 15    E  ( )    E    F    F    F    D    E    E    E    D    E    F    D    A    D    D    E    D    D    B    D    E    E    E
 16    E    D    E    E    E    E    E    F    E    E    D    B    A    B    B    D    D    C    D    F    F    E    F    F    D
 17  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )  ( )    B    A    E    B    A    E    E    F    F  ( )
 18    F    F    F    F    F    F    E    E    D    D    D    B    A    B    B    B    B    D    E    E    F    E    E    E    D
 19    F  ( )    F    D    E    D    E    F    E    E    E    E    B    D    E    D    D    D    D    D    E    F    F    F    E
 20    F    F    F    F    F    F    F    F    E    E    F    E    E    E    D    D    D    D    E    E    E    E    E    E    E
 21    E    E    E    E    E    E    D    E  ( )    E    D    C    E    D    D    D    E    D    D    D    E    F    F    F    E
 22    E    F    E    E    E    F    F  ( )    D    E    B    B    E    E    E    F    E    F    F    E    F    F    F    F    E
 23    F    F    F    F    F    F    F    E    D    A    A    D    D    C    D    D    E    D    E    E    E    E    E    E    E
 24    F    F    F    F    E    E    E    E    E    E    E    E    D    D    D    D    D    D    E    E    D    F    F    F    E
 25    F    F    F    F    E    D    E    E    A    E    E    C    D    D    B    D    C    B    D    C    D    E    E    E    D
 26    E    E    E    E    E    E    E    C    D    B    B    A    B    B    A    B    B    D    E    D    D    E    D    E    D
 27    E    F    E    E    F  ( )    E    E    C    A    B  ( )    E    D    D    E    C    D    E    F    F    F    F    F    E
 28    E    E    F    F    F    F    F    F    D    D    B    B    B    C    B    C    D    D    D    E    F    D    E    E    D
 29    E    E    E    E    E    F    F    E    A    B    B    B    B    C    B    B    B    D    E    F    F    F    F    F    D
 30    F    F  ( )    F    F    F    F    E    B    B    B    D    E    B    B    B    B    C    E    E    F    F    F    F    D
 31  ( )    F    F    F    F    F    F    E    B    B    B    B    C    D    B    B    D    C    E    F    F    F    E  ( )    D

AVE    E    E    E    E    E    E    E    E    D    D    C    C    D    C    C    C    C    D    D    E    E    E    E    E    D


    TOTAL OCCURRENCES:  A= 26     B= 86     C= 27     D=158     E=248     F=171     HOURS MISSING= 28
```

II-3-2

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(8/01/82 TO 8/31/82)

CONCENTRATION MAX UG/M**3								WIND DIRECTION										
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	16	17	25	29	38	71	78	64	57	90	61	32	25	24	44	22	12 :	705
TOTAL :	16	17	25	29	38	71	78	64	57	90	61	32	25	24	44	22	12	705
MEAN CONC.	1	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	1

0 = NO OBSERVATIONS

(10/22/82-RPI)

```
              NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

      OXIDES OF NITROGEN (NOX)                                                        CATHEDRAL BLUFFS SHALE OIL

                            TRAILER   AB23      PERIOD( 8/01/82 TO  8/31/82)
                                                           WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
     MAX             3    1    3    3    3    3    3    3    3    3    3    3    3    5    3    3    3
   UG/M**3
              .........................................................................................
  GT    65. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 60. -  65. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 55. -  60. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 50. -  55. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 45. -  50. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 40. -  45. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 35. -  40. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 30. -  35. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 25. -  30. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 20. -  25. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 15. -  20. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 10. -  15. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  5. -  10. :    0    0    0    0    0    0    0    0    0    0    0    0    0    1    0    0    0 :     1
  LT     5. :   16   17   25   29   38   71   78   64   57   90   61   32   25   23   44   22   12 :   704
   TOTAL    :   16   17   25   29   38   71   78   64   57   90   61   32   25   24   44   22   12     705
              .........................................................................................

   MEAN          2    1    1    2    1    1    1    1    1    1    1    1    2    2    2    2    1       1
   CONC.

              0 = NO OBSERVATIONS
```

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(8/01/82 TO 8/31/82)

CONCENTRATION MAX UG/M**3	N 3	NNE 1	NE 1	ENE 3	E 1	ESE 1	SE 3	SSE 3	S 1	SSW 3	SW 1	WSW 1	W 1	WNW 3	NW 3	NNW 1	CALM 1	TOTAL
	WIND DIRECTION																	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	16	17	25	29	38	71	78	64	57	90	61	32	25	24	44	22	12 :	705
TOTAL :	16	17	25	29	38	71	78	64	57	90	61	32	25	24	44	22	12	705
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(8/01/82 TO 8/31/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	101	96	99	94	94	98	101	143	99	99	107	96	98	99	105	99	82	
GT 140. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
130. - 140. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0 :	4
90. - 100. :	3	2	7	2	1	6	6	3	1	4	3	4	5	8	4	6	0 :	65
80. - 90. :	7	4	2	4	3	6	7	16	11	31	27	11	6	8	20	9	2 :	174
70. - 80. :	1	5	4	5	7	15	20	15	25	31	17	9	8	5	10	3	4 :	184
60. - 70. :	1	4	9	10	17	32	32	16	16	18	7	7	4	1	6	4	4 :	188
50. - 60. :	1	2	3	6	10	9	6	6	3	4	3	0	2	1	1	0	0 :	57
40. - 50. :	2	0	1	2	0	2	4	5	1	1	0	1	0	1	3	0	2 :	25
30. - 40. :	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	0	0 :	5
20. - 30. :	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0 :	2
LT 20. :	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0 :	2
TOTAL :	16	17	26	29	38	71	78	63	57	90	62	32	25	25	45	22	12	708
MEAN CONC.	77	73	73	66	66	68	69	72	73	75	75	76	77	79	78	83	67	73

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(8/01/82 TO 8/31/82)

CONCENTRATION	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	114	114	229	114	114	0	114	114	114	114	229	114	114	114	114	114	114	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	2
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	2	2	0	3	4	0	1	1	2	8	5	1	4	4	4	1	2 :	44
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	8	13	18	18	32	66	61	50	43	74	50	31	19	17	31	20	8 :	559
TOTAL :	10	15	19	21	36	66	62	51	45	82	56	32	23	21	35	21	10	605
MEAN CONC.	22	15	12	16	12	0	1	2	5	11	14	3	19	21	13	5	22	9

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(8/01/82 TO 8/31/82)

	WIND DIRECTION																	
CONCENTRATION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	5	7	5	7	7	13	10	5	10	7	7	7	5	15	13	7	5	
GT 13. :	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0 :	4
12. - 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11. :	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0 :	4
9. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8. :	0	1	0	1	1	0	1	0	7	5	1	2	0	1	2	2	0 :	24
6. - 7. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6. :	5	4	3	5	7	5	4	4	5	16	13	3	6	5	8	7	2 :	102
4. - 5. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	5	5	10	6	5	15	19	12	15	26	19	16	6	8	11	5	2 :	185
1. - 2. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1. :	5	6	11	17	23	48	51	46	28	41	26	9	9	8	15	8	8 :	359
TOTAL :	15	16	24	29	36	71	76	62	56	88	59	30	21	24	37	22	12	678
MEAN CONC.	2	2	1	1	1	1	1	0	2	2	2	2	2	3	2	2	1	1

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(8/01/82 TO 8/31/82)

CONCENTRATION MAX UG/M**3			N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
			6	5	6	6	5	8	6	8	6	6	6	8	5	8	6	6	4	
GT	13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
12. -	13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. -	12.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. -	11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
9. -	10.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	9.	:	0	0	0	0	0	1	0	1	0	0	0	1	0	2	0	0	0 :	5
7. -	8.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
6. -	7.	:	1	0	1	1	0	3	1	2	2	1	3	1	0	3	2	2	0 :	23
5. -	6.	:	3	3	5	2	1	3	4	8	6	6	2	2	3	2	6	5	0 :	61
4. -	5.	:	3	4	5	5	5	14	16	16	7	13	6	5	2	6	17	8	2 :	134
3. -	4.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. -	3.	:	2	2	7	7	12	19	17	10	12	13	8	4	8	8	5	4	2 :	140
1. -	2.	:	4	2	2	4	6	11	16	19	6	13	7	1	3	2	6	3	2 :	107
LT	1.	:	2	5	4	10	12	20	22	6	23	42	33	16	5	1	1	0	6 :	208
TOTAL		:	15	16	24	29	36	71	76	62	56	88	59	30	21	24	37	22	12	678
MEAN CONC.			3	2	3	2	1	2	2	3	2	1	1	1	2	4	3	4	1	2

0 = NO OBSERVATIONS

(10/22/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(8/01/82 TO 8/31/82)

	WIND DIRECTION																	
WIND SPEED	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	3	3	4	3	4	4	4	6	7	6	5	4	4	5	4	2	0	
METERS/SEC																		
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 8. :	0	0	0	0	0	0	0	3	2	4	3	0	0	1	0	0	0 :	13
3. - 5. :	1	2	1	2	2	7	8	15	17	33	17	13	4	4	12	0	0 :	138
1. - 3. :	5	5	11	18	23	55	58	34	21	34	24	14	14	15	24	12	0 :	367
LT 1. :	10	11	15	9	15	12	14	17	17	20	18	5	8	6	9	12	0 :	198
TOTAL :	16	18	27	29	40	74	80	69	57	91	62	32	26	26	45	24	0	716
PERCENT	2.	3.	4.	4.	6.	10.	11.	10.	8.	13.	9.	4.	4.	4.	6.	3.	0.	100.

0 = NO OBSERVATIONS

(10/22/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(8/01/82 TO 8/31/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	4	4	5	6	6	6	6	8	9	8	8	7	5	7	5	4	0	
GT 11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. - 11.	0	0	0	0	0	0	0	3	1	1	2	0	0	0	0	0	0	7
5. - 8.	0	0	1	1	1	2	7	8	11	21	7	5	2	3	2	0	0	71
3. - 5.	3	3	4	7	5	29	24	21	16	41	23	13	5	9	17	2	0	222
1. - 3.	6	5	10	11	16	30	45	36	17	20	10	7	14	15	17	16	0	275
LT 1.	11	3	6	6	5	6	12	15	13	16	11	13	6	6	11	4	0	144
TOTAL	20	11	21	25	27	67	88	83	58	99	53	38	27	33	47	22	0	719
PERCENT	3.	2.	3.	3.	4.	9.	12.	12.	8.	14.	7.	5.	4.	5.	7.	3.	0.	100.

0 = NO OBSERVATIONS

```
                              FREQUENCY TABLE OF WIND SPEED BY DIRECTION

      60 METER LEVEL                                                                    CATHEDRAL BLUFFS SHALE OIL

                               STATION AA23   PERIOD( 8/01/82 TO  8/31/82)

                                                        WIND DIRECTION
                      N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   VAR  TOTAL
WIND SPEED
   MAX                4     4     4     6     7     5     8    10    12    11     9     7     5     8     5     6     0
METERS/SEC

                ..............................................................................................................

  GT    11. :         0     0     0     0     0     0     0     0     1     1     0     0     0     0     0     0     0 :     2

  8. -  11. :         0     0     0     0     0     0     1     7     2     4     2     0     0     1     0     0     0 :    17

  5. -   8. :         0     0     0     1     3     1    14    15    12    29    22     8     2     4     2     1     0 :   114

  3. -   5. :         4     4     5     5     5    18    25    29    19    31    25    12    10     7    21     6     0 :   226

  1. -   3. :         9     3    11    11    12    26    32    34    25    31    13    10    13    15    17    15     0 :   277

  LT     1. :         3     3     7     2     2     3     6    10     3     6    11     6     6     6     8     7     0 :    89

   TOTAL    :        16    10    23    19    22    48    78    95    62   102    73    36    31    33    48    29     0     725
                ..............................................................................................................

   PERCENT           2.    1.    3.    3.    3.    7.   11.   13.    9.   14.   10.    5.    4.    5.    7.    4.    0.  100.

                0 = NO OBSERVATIONS
```

(10/22/82-RPI)

```
FIVE MAXIMUM SLIDING AVERAGE                                        C-B TRACT
UG/M**3                                                             SITE AB23
                                                                    AUG  1982
                                                                    CATHEDRAL BLUFFS SHALE OIL CO.

      COMPONENT      AVG. TIME      RANK      DAY      HOUR(BEG)     VALUE
        SO2             3 HR
                                     1         18         13          14.0
                                     2         18         16          11.3
                                     3         18         19           9.6
                                     4          1         17           7.9
                                     5          4         10           7.9
        SO2            24 HR
                                     1         18         13           8.3
                                     2          3         13           6.1
                                     3          1          1           5.7
                                     4         19         13           4.9
                                     5          4         15           4.0
        CO              1 HR
                                     1         18         11         200.0
                                     2         23         24         200.0
                                     3          1         19         100.0
                                     4          3         19         100.0
                                     5          3         20         100.0
        CO              8 HR
                                     1          3         19         100.0
                                     2          4          3         100.0
                                     3         31          8         100.0
                                     4          5          7         100.0
                                     5          9         13         100.0
        O3              1 HR
                                     1          7         24         143.2
                                     2          7         23         135.4
                                     3         18         12         107.9
                                     4         18         15         105.9
                                     5          7         22         102.0
        PART           24 HR
                                     1         19          1          25.7
                                     2         23          1          24.5
                                     3         31          1          21.7
                                     4         27          1          18.9
                                     5          7          1          11.2
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

AUGUST 1982

GASEOUS PARAMETERS	
NOX:	95 %
NO:	95
NO2:	95
O3:	95
CO:	82
SO2:	92
H2S:	92

PARTICULATES: 100 %

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	98 %
30 M:	98
60 M:	98
WIND DIRECTION	
10 M:	98
30 M:	98
60 M:	98
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	98
30 M:	98
60 M:	98
TEMPERATURE	
10 M:	98
30 M:	98
60 M:	98
DELTA TEMPERATURE:	98
RELATIVE HUMIDITY:	99
SOLAR RADIATION:	98
BAROMETRIC PRESSURE:	98
PRECIPITATION:	100

SEPTEMBER

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-397
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-398
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-399
Ozone (O_3) at Station AB23 . . . . II-400
Carbon Monoxide (CO) at Station AB23 . . . . II-401
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-402
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-403
Particulates Daily Average at Stations AB23 . . . . II-404

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-405
Wind Speed at Station AA23 - 30 Meter Level II-406
Wind Speed at Station AA23 - 60 Meter Level II-407
Wind Direction at Station AA23 - 10 Meter Level II-408
Wind Direction at Station AA23 - 30 Meter Level II-409
Wind Direction at Station AA23 - 60 Meter Level II-410
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-411
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-412
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-413
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-414
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-415
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-416
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-417
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-418
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-419
Delta Temperature (60m - 10m) at Station AA23 . . . . II-420
Relative Humidity at Station AB23 - 3 Meter Level II-421
Solar Radiation at Station AB23 . . . . II-422
Barometric Pressure at Station AB23 . . . . II-423
Precipitation at Station AB23 . . . . II-424
Precipitation at Station AD28 . . . . II-425
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-426

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-427
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-428
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-429
Ozone (O_3) at Station AB23. II-430
Carbon Monoxide (CO) at Station AB23. . . . . II-431
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-432
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-433

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-434
Station AA23 - 30 Meter Level II-435
Station AA23 - 60 Meter Level II-436

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-437

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-438

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	1	0	0	1	2	1	2
2	0	1	0	1	0	0	1	0	1	1	1	0	0	0	0	0	1	0	0	1	1	1	0	2	1	2
3	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0	1	0	0	1	0	0	1	0	1
4	1	1	0	1	1	0	1	1	1	1	1	0	0	1	1	0	1	1	1	0	1	0	1	2	1	2
5	1	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1	0	0	1	2	1	2
6	0	1	0	0	1	1	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	1	1	2	1	2
7	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	2	1	2
8	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	0	0	0	0	1	1	2	1	2
9	1	0	0	0	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1
10	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	2	1	2
11	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	1	2
12	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	2	1	2
13	0	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	2
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	1	2
15	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0	1	2	1	2
16	1	0	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1
17	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	2	1	2
18	1	1	1	0	1	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1
19	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	2	1	2
20	1	1	1	1	1	1	1	1	2	1	2	1	1	2	1	1	1	1	1	2	1	2	1	2	2	2
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
22	1	1	1	1	1	1	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	2
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(PF)	(PF)	(MT)	(MT)	(MT)	1	1	(MT)	(MT)	0	0	1	0	0	0	0	1	1	( )	1
24	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
25	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
27	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1
28	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	1	1	1	1	0	0	0	0	0	0	1	0	1
29	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
30	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	1
AV	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
PK	1	1	1	1	1	1	2	2	2	1	2	1	1	2	1	1	1	1	1	2	1	2	1	2		2

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	2	2	0	0	0	2	2	2	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	1	2
2	2	0	2	0	0	2	0	2	2	4	2	2	2	2	2	0	0	2	2	0	0	0	0	2	1	4
3	0	2	0	0	2	2	0	2	2	2	0	0	2	2	0	2	0	0	0	0	2	0	0	0	1	2
4	2	2	0	0	2	0	2	0	2	2	2	2	2	2	0	2	2	0	2	2	0	2	2	0	1	2
5	2	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	0	2	0	1	2
6	2	2	2	2	0	2	0	2	2	2	2	2	2	2	0	2	2	0	2	0	0	0	2	0	1	2
7	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	0	2	0	0	0	0	1	2
8	0	0	2	2	0	0	0	2	0	2	2	2	2	2	2	2	2	0	0	0	2	2	2	2	1	2
9	2	2	2	0	2	2	2	2	2	2	2	0	0	2	0	2	2	2	0	0	2	2	2	0	1	2
10	2	0	2	2	2	2	2	2	2	2	2	2	2	4	2	4	2	2	0	2	0	2	2	0	2	4
11	2	2	2	0	0	2	2	2	2	2	2	4	0	0	0	0	0	2	0	0	0	0	0	2	1	4
12	2	2	0	0	0	2	0	0	2	2	2	2	2	0	2	0	2	0	0	0	0	0	0	0	1	2
13	0	0	0	2	0	0	0	0	2	2	2	2	2	0	0	0	2	0	0	0	0	0	0	0	1	2
14	2	2	0	0	0	0	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	2	1	2
15	2	0	2	2	0	2	0	0	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	1	2
16	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
17	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2	0	2	0	0	0	0	0	1	2
18	2	2	2	0	0	0	2	2	2	2	2	2	0	2	0	2	0	2	0	0	0	0	0	0	1	2
19	0	0	0	2	2	0	2	0	2	2	2	0	2	2	2	0	2	0	0	0	0	0	0	0	1	2
20	2	0	0	2	0	0	0	2	2	4	4	4	2	4	2	4	2	2	2	2	2	4	2	4	2	4
21	4	4	4	4	2	4	4	4	4	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4
22	2	2	2	2	4	4	4	6	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	6
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(PF)	(PF)	(MT)	(MT)	(MT)	2	2	(MT)	(MT)	4	2	2	2	2	2	2	2	2	( )	4
24	2	2	2	0	2	2	2	4	2	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	4
25	4	2	2	2	2	0	2	2	2	2	2	2	4	4	2	4	2	2	2	4	2	2	2	2	2	4
26	4	4	2	2	2	2	2	2	2	2	2	2	4	4	2	2	2	0	2	2	2	0	2	0	2	4
27	0	2	0	2	2	2	2	2	2	2	2	2	2	6	4	2	2	2	2	2	2	2	2	2	2	6
28	2	2	2	2	2	2	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	2	2	2	2	2	2	2	2	2	2	2	2	2
29	2	2	2	0	0	2	2	2	2	2	2	4	2	4	2	2	2	2	2	2	2	2	2	2	2	4
30	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	4	4	4	4	4	2	4	4	3	4
AV	2	1	1	1	1	1	1	2	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	
PK	4	4	4	4	4	4	4	6	4	4	4	4	4	6	4	4	4	4	4	4	4	4	4	4		6

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
2	2	0	2	0	0	2	0	2	0	2	0	2	2	2	2	0	0	2	2	0	0	0	0	0	1	2
3	0	2	0	0	2	2	0	2	0	0	0	0	2	2	0	2	0	0	0	0	0	0	0	0	1	2
4	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	2	0	0	0	2	0	2	0	0	0	2
5	0	0	0	0	0	0	0	0	2	0	0	2	0	2	0	2	0	2	2	0	2	0	0	0	1	2
6	2	0	2	2	0	0	0	0	0	0	0	2	2	2	0	0	0	0	2	0	0	0	0	0	1	2
7	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
8	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	2
9	0	2	2	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2
10	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	2
11	0	0	0	0	0	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	2
12	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
13	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	2	0	2	0	0	0	2
16	2	2	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	2
17	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
18	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
19	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
20	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2
21	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
22	0	0	0	2	2	2	0	2	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	2
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(PF)	(PF)	(MT)	(MT)	(MT)	0	0	(MT)	(MT)	4	2	0	2	2	2	2	0	0	( )	4
24	2	2	2	0	2	2	2	2	2	0	4	4	2	2	2	2	2	2	2	2	2	2	2	0	2	4
25	4	2	2	2	2	0	0	2	2	2	2	2	4	4	2	4	0	2	2	4	2	2	2	0	2	4
26	4	4	2	2	2	2	2	2	2	2	2	2	4	4	0	2	2	0	2	2	2	0	2	0	2	4
27	0	2	0	2	2	2	2	2	2	2	2	2	2	4	4	2	2	2	2	2	2	2	2	0	2	4
28	2	2	2	2	2	2	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	2	2	2	2	2	2	0	1	2
29	2	2	2	0	0	2	2	0	0	0	2	4	2	4	2	2	2	2	2	2	0	2	2	0	1	4
30	2	2	0	2	2	2	4	2	2	2	2	2	0	2	2	2	2	2	4	4	4	2	4	2	2	4
AV	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	
PK	4	4	2	2	2	2	4	2	2	2	4	4	4	4	4	4	2	2	4	4	4	2	4	2		4

(11/09/82-RPT)

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	49	55	55	59	59	59	55	49	61	80	86	86	88	82	82	80	80	80	80	73	67	76	67	67	70	88
2	69	69	63	65	69	67	59	51	61	71	78	80	86	86	88	86	86	84	82	76	73	74	71	74	74	88
3	74	74	71	76	74	78	74	69	67	80	80	80	84	84	80	80	80	80	80	74	73	73	71	73	76	84
4	69	73	71	71	71	71	73	73	80	80	82	88	96	100	98	100	100	104	100	82	84	78	80	90	84	104
5	84	82	80	73	76	74	71	65	67	78	80	86	88	88	86	86	74	69	71	59	51	49	47	49	72	88
6	49	49	51	59	61	61	51	49	57	65	71	76	78	73	71	73	69	63	55	59	61	59	55	51	61	78
7	45	51	47	49	49	45	37	45	45	55	49	49	53	61	55	65	67	61	61	47	49	57	63	65	53	67
8	55	61	61	61	63	59	59	53	51	55	69	65	65	57	55	65	65	61	61	51	49	47	47	49	57	69
9	45	47	51	51	49	51	47	49	59	71	71	73	63	61	63	67	65	65	57	55	63	59	53	59	58	73
10	61	61	51	53	43	49	61	63	67	76	73	63	73	82	82	80	78	80	71	63	53	53	49	49	64	82
11	47	45	45	35	39	43	47	45	41	41	41	41	43	45	43	43	45	43	41	39	37	33	29	24	41	47
12	29	31	31	24	25	27	27	27	45	59	63	71	73	65	63	55	51	47	43	41	35	35	43	41	44	73
13	31	37	47	45	41	31	27	37	45	49	53	61	61	61	71	82	78	76	69	69	65	73	71	61	56	82
14	61	63	61	55	49	55	55	63	65	67	67	69	69	69	65	63	59	51	45	33	31	37	29	29	54	69
15	41	39	41	31	29	31	25	24	29	51	67	69	69	65	63	67	69	67	61	51	49	47	59	57	50	69
16	51	51	51	49	49	49	49	49	53	63	67	69	69	71	76	71	74	69	59	55	61	59	59	49	59	76
17	55	57	53	61	53	55	49	45	49	55	57	61	61	63	65	67	65	61	53	45	47	49	49	55	55	67
18	47	51	47	51	49	47	41	39	43	51	61	61	59	51	47	49	51	55	49	49	45	39	35	31	48	61
19	31	35	31	29	27	25	24	22	25	31	35	37	45	45	47	43	43	39	33	31	29	33	37	29	34	47
20	24	22	24	25	24	27	27	24	29	35	43	47	49	49	55	59	61	57	45	41	45	45	39	35	39	61
21	35	35	35	35	33	33	29	29	37	55	61	61	63	65	61	57	59	55	49	51	49	49	45	47	47	65
22	43	47	43	47	45	43	43	41	49	61	67	69	67	67	67	63	67	67	63	63	63	63	65	61	57	69
23	57	59	61	63	61	47	(PF)	(PF)	39	65	69	67	65	67	73	78	67	67	55	57	61	63	59	45	61	78
24	49	49	53	51	51	47	49	43	49	57	67	74	78	76	73	73	71	65	53	53	53	49	57	59	58	78
25	57	53	51	47	47	47	49	39	41	51	41	57	51	51	53	61	61	55	43	35	37	39	35	31	47	61
26	29	37	43	45	41	37	37	41	43	53	53	53	51	51	49	49	49	51	45	41	41	41	43	47	45	53
27	45	49	45	31	29	37	37	43	43	65	71	67	59	55	63	(CA)	(CA)	65	67	67	71	65	73	74	55	74
28	71	65	67	67	69	67	63	59	57	53	53	55	63	61	57	63	61	61	61	53	49	49	47	61	59	71
29	61	61	61	61	63	57	51	51	(CA)	61	67	76	82	82	80	80	76	67	53	41	39	39	27	31	59	82
30	22	25	24	55	65	63	57	61	61	57	59	57	55	59	59	51	57	53	59	57	55	55	43	43	52	65
AV	50	51	50	51	50	49	47	46	50	60	63	66	67	66	66	67	66	64	59	54	53	53	52	51	56	
PK	84	82	80	76	76	78	74	73	80	80	86	88	96	100	98	100	100	104	100	82	84	78	80	90		104

(11/09/82-RPI)

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	19	100
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	5	100
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	(PF)	0	0	100	0	0	0	100	100	17	100
5	100	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	43	100
6	0	0	100	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	14	100
7	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	100	100	100	100	100	0	0	0	29	100
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	10	100
12	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	100
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	0	0	0	19	100
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	100	100	100	100	0	0	0	0	0	100	100	100	100	100	100	100	100	0	0	57	100
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	100	100	100	100	(PF)	(PF)	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	0	37	100
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	100	100	24	100
27	0	0	0	0	0	0	0	0	100	0	0	0	0	0	100	100	100	100	100	100	100	100	0	0	43	100
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(CA)	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	(CA)	(CA)	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	4	0	8	4	4	11	12	29	12	4	0	0	0	8	20	16	16	19	31	27	31	11	8	8	12	
PK	100	0	100	100	100	100	100	100	100	100	0	0	0	100	100	100	100	100	100	100	100	100	100	100		100

(11/09/82-RPI)

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	3	0	3	0	0	3	3	5	3	5	5	3	3	5	5	5	5	5	3	3	3	0	3	5
2	3	3	5	3	3	3	3	5	3	5	3	5	5	5	5	3	5	5	5	3	3	3	3	3	4	5
3	3	3	5	3	5	5	3	3	0	3	3	3	3	3	3	3	3	3	3	3	0	0	3	3	3	5
4	3	3	3	3	3	3	0	5	3	3	5	5	5	5	5	5	5	0	3	0	0	0	0	0	3	5
5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	3	0	3	2	3
6	3	3	3	3	0	3	3	3	3	3	3	3	3	3	5	3	3	0	3	0	0	0	0	0	2	5
7	0	0	0	0	0	0	0	3	3	0	0	0	3	3	3	3	3	3	0	3	0	0	0	0	1	3
8	0	0	0	0	0	0	0	3	0	0	3	0	3	3	0	0	3	3	0	0	0	0	0	0	1	3
9	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
16	0	0	0	0	0	0	0	3	3	0	3	3	3	3	3	0	0	0	0	0	0	0	0	0	1	3
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	0
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(PF)	(PF)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	5	5	3	0	0	0	0	0	( )	5
24	0	0	0	0	0	0	0	0	0	3	3	3	3	5	3	3	0	3	0	3	0	0	0	0	1	5
25	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	3
28	0	0	0	0	0	0	0	3	3	0	0	0	0	(CA)	(CA)	(CA)	3	3	0	0	0	0	0	0	0	3
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	
PK	3	3	5	3	5	5	3	5	3	5	5	5	5	5	5	5	5	5	5	5	3	3	3	3		5

(11/09/82-JPT)

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	0	1	1	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	3	3	3	1	1	1	1	0	0	0	1	0	0	0	1	0	0	0	1	3
6	0	0	1	0	0	1	0	0	0	1	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
16	0	0	0	0	0	0	0	0	3	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	3
17	0	0	0	0	0	0	0	0	0	6	4	6	4	6	6	4	4	4	3	3	4	1	3	1	2	6
18	3	4	3	3	3	3	3	3	3	4	4	6	6	6	4	3	1	1	3	0	0	0	0	0	3	6
19	0	0	0	0	0	0	0	0	1	1	3	3	3	1	3	1	1	1	0	0	0	0	0	1	1	3
20	1	3	1	1	1	3	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3
21	1	1	1	1	3	1	0	1	1	1	3	1	1	4	7	6	4	3	3	1	1	0	0	0	2	7
22	0	0	0	1	1	0	3	3	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(1	3
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(PF)	(PF)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	( )	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	3	3	3	3	1	3	0	0	0	1	3
28	0	1	0	0	0	0	0	3	7	7	4	3	1	(CA)	(CA)	(CA)	4	6	4	1	0	0	0	0	2	7
29	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	4	4	4	3	3	3	1	4
AV	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	
PK	3	4	3	3	3	3	3	3	7	7	4	6	6	6	7	6	4	6	4	4	4	3	3	3		7

[illegible]

PARTICULATE DATA
UG/M3

C-B TRACT
SEPT 1982
OCCIDENTAL OIL SHALE, INC.

			STATION		
DAY	AB20	AB23	AB26	AD42	AD56
4	( )	20.5	( )	( )	( )
8	( )	17.7	( )	( )	( )
12	( )	14.9	( )	( )	( )
16	( )	19.3	( )	( )	( )
20	( )	17.2	( )	( )	( )
24	( )	21.5	( )	( )	( )
AVE	( )	18.5	( )	( )	( )
GM	( )	18.4	( )	( )	( )
PEAK	( )	21.5	( )	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	1	2	0	1	1	0	0	1	1	1	2	3	3	3	4	4	4	3	2	2	0	0	2	2	4
2	2	2	2	1	1	1	0	1	1	1	1	2	3	4	2	2	2	2	3	2	2	1	0	2	2	4
3	2	3	4	4	4	4	4	5	6	5	6	6	6	4	4	4	4	4	4	2	2	3	1	4	4	6
4	0	0	1	0	0	(CM)	0	0	1	3	5	4	4	4	4	4	3	4	3	3	0	2	2	2	2	5
5	0	0	1	0	0	(CM)	0	0	1	3	5	4	4	4	4	4	3	4	3	3	0	2	2	2	2	5
6	1	1	1	5	6	5	4	7	6	6	6	5	4	4	3	1	1	4	4	4	4	4	2	2	4	7
7	1	1	2	1	1	0	1	1	1	2	5	4	6	4	4	4	3	7	2	4	3	4	4	1	3	7
8	1	2	1	1	0	1	1	1	2	5	4	6	4	4	4	3	5	7	2	4	3	4	4	2	3	7
9	3	1	1	2	2	3	1	3	2	4	4	4	4	4	5	2	4	3	0	2	2	2	2	2	3	5
10	0	1	2	0	1	1	0	0	1	1	1	2	3	3	3	4	4	4	3	2	2	0	0	2	2	4
11	2	2	2	2	1	2	4	4	3	4	6	6	5	4	4	5	3	4	4	2	4	0	1	1	3	6
12	(CM)	2	0	0	1	2	4	4	4	4	4	4	4	4	4	3	2	2	1	2	1	1	1	1	2	4
13	0	0	0	1	1	0	0	2	1	1	1	1	0	3	2	3	1	2	2	2	1	2	(CM)	2	1	3
14	1	2	3	2	2	0	0	1	3	3	4	6	5	5	3	2	4	3	4	5	4	4	4	1	3	6
15	3	3	3	2	1	1	2	2	3	4	5	5	4	4	3	2	2	1	0	1	1	(CM)	1	1	2	5
16	2	2	3	1	1	(CM)	0	1	1	4	8	7	7	7	7	6	6	4	2	2	2	1	4	4	4	8
17	4	4	5	5	5	5	3	2	3	4	6	6	5	6	5	4	4	2	1	1	1	2	2	1	4	6
18	1	0	1	4	2	6	6	0	3	4	4	4	4	4	3	3	4	3	2	3	1	2	1	1	3	6
19	1	1	1	1	1	0	1	1	0	0	1	1	(CM)	2	3	4	4	2	5	5	4	1	2	2	2	5
20	1	0	0	0	1	(CM)	0	0	1	1	2	1	2	2	2	3	3	3	1	0	1	1	0	0	1	3
21	1	0	0	0	1	(CM)	0	0	1	1	2	1	2	2	2	3	3	3	1	0	1	1	0	0	1	3
22	1	2	3	3	2	1	0	2	3	2	3	3	2	3	2	4	4	3	3	3	2	1	2	2	2	4
23	2	2	2	2	2	2	2	1	1	3	1	1	2	3	2	3	4	3	3	3	1	(CM)	1	1	2	4
24	1	1	3	2	1	2	2	1	2	2	2	2	2	1	1	2	2	2	2	4	4	4	3	( )	2	4
25	2	2	1	2	0	1	(PF)	(PF)	0	2	3	3	3	4	4	5	4	3	2	3	0	0	(CM)	1	2	5
26	0	1	1	1	1	0	0	1	0	1	1	1	1	1	2	2	0	1	0	2	1	0	0	2	1	2
27	2	2	1	1	1	1	1	1	1	1	0	1	1	1	2	2	3	1	0	1	3	2	1	(CM)	1	3
28	1	1	3	2	2	1	2	3	2	4	6	5	6	5	6	8	7	6	4	3	4	6	6	5	4	8
29	5	4	2	2	1	3	0	1	4	4	1	1	3	5	6	8	7	7	7	4	3	1	3	3	4	8
30	2	4	3	1	4	1	2	1	2	3	3	6	7	5	4	3	1	2	0	2	1	1	1	1	2	7
AV	2	2	2	2	2	2	2	2	2	3	3	4	4	4	3	4	3	3	2	3	2	2	2	2	2	
PK	5	4	5	5	6	6	6	7	6	6	8	7	7	7	7	8	7	7	7	5	4	6	6	5		8

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	0	3	0	0	1	0	0	1	2	2	3	4	4	4	5	6	5	4	2	2	0	2	3	2	6
2	4	4	4	1	2	1	1	2	2	2	1	3	4	5	3	3	2	4	5	4	4	2	1	3	3	5
3	3	5	6	6	5	5	6	7	8	8	8	8	8	5	4	6	5	6	5	3	3	5	2	5	6	8
4	0	0	1	0	0	0	(CM)	1	2	4	7	6	5	6	5	6	4	5	4	6	2	1	2	0	3	7
5	0	0	1	0	0	0	(CM)	1	2	4	7	6	5	6	5	6	4	5	4	6	2	1	2	0	3	7
6	1	1	1	7	9	8	6	9	8	8	8	7	6	6	4	2	2	5	8	6	7	6	4	2	5	9
7	0	0	1	1	0	1	1	2	1	3	7	5	8	6	6	5	4	10	3	7	4	6	6	0	4	10
8	0	1	1	0	1	1	2	1	3	7	5	8	6	6	5	4	7	10	3	7	4	6	6	3	4	10
9	5	3	2	4	3	4	2	4	3	4	6	6	5	5	7	4	6	4	1	2	4	4	4	3	4	7
10	1	0	3	0	0	1	0	0	1	2	2	3	4	4	4	5	6	5	4	2	2	0	2	3	2	6
11	3	3	4	3	1	3	5	6	4	5	8	8	7	6	6	7	4	6	4	3	5	0	1	1	4	8
12	0	3	0	0	1	3	5	5	4	4	6	5	6	6	4	4	2	3	2	3	2	2	2	2	3	6
13	0	(CM)	0	2	1	0	0	2	1	1	1	1	1	4	3	4	2	2	4	4	1	3	0	2	2	4
14	2	4	4	4	4	0	1	2	4	4	6	8	7	7	4	3	5	4	6	7	7	6	5	2	5	8
15	4	5	5	4	2	1	2	4	4	5	7	7	6	5	4	3	3	1	1	1	2	(CM)	1	1	3	7
16	3	4	4	1	1	(CM)	0	1	1	5	10	9	9	10	10	8	8	6	4	4	4	3	6	6	5	10
17	6	7	8	8	8	8	4	4	4	5	8	8	8	8	7	6	5	4	2	2	2	3	3	1	5	8
18	1	1	3	6	3	9	8	1	4	6	5	6	5	5	4	4	4	4	4	4	2	3	2	2	4	9
19	1	0	1	0	0	0	1	1	0	0	1	1	(CM)	3	4	5	5	3	8	8	7	3	3	3	3	8
20	3	1	0	0	0	0	0	0	1	2	2	2	2	3	2	4	4	4	2	0	(CM)	1	1	0	2	4
21	3	1	0	0	0	0	0	0	1	2	2	2	2	3	2	4	4	4	2	0	(CM)	1	1	0	2	4
22	2	2	4	5	4	2	(CM)	3	4	3	3	4	3	4	2	5	4	5	5	5	3	1	2	3	3	5
23	4	4	4	3	4	4	3	2	2	3	1	2	3	4	2	4	4	5	5	5	3	1	(CM)	1	3	5
24	1	2	4	4	2	3	2	2	3	3	3	3	3	2	2	3	3	3	2	8	8	7	5	( )	3	8
25	4	4	3	3	1	1	(PF)	(PF)	0	3	4	4	4	5	6	6	6	5	3	4	0	0	(CM)	1	3	6
26	(CM)	1	1	(CM)	1	1	0	1	0	1	1	2	1	1	2	3	0	1	1	4	3	0	1	3	1	4
27	3	2	2	1	1	1	1	1	2	2	0	1	1	2	2	3	4	1	0	1	4	4	2	1	2	4
28	2	2	5	4	4	1	4	4	4	6	8	7	8	8	8	10	9	8	6	5	6	8	8	8	6	10
29	7	6	3	3	2	4	1	2	5	6	2	2	4	7	8	11	10	10	9	5	4	1	4	4	5	11
30	3	5	4	2	6	1	3	1	3	4	4	8	10	7	5	4	1	4	0	3	2	2	1	1	4	10
AV	2	2	3	3	2	2	2	2	3	4	4	5	5	5	4	5	5	5	4	4	4	3	3	2	3	
PK	7	7	8	8	9	9	8	9	8	8	10	9	10	10	10	11	10	10	9	8	8	8	8	8		11

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	2	2	2	2	1	1	1	2	2	3	4	4	4	6	6	6	5	3	2	1	2	4	3	6
2	3	4	4	2	1	1	(CM)	2	2	2	1	4	5	6	3	3	3	4	7	4	5	3	2	4	3	7
3	4	5	8	7	7	7	8	8	9	9	9	9	9	6	5	8	6	7	7	5	4	6	2	7	7	9
4	1	2	1	1	1	0	3	1	1	4	7	6	6	6	6	6	5	6	5	8	4	0	1	2	3	8
5	1	2	1	1	1	0	3	1	1	4	7	6	6	6	6	6	5	6	5	8	4	0	1	2	3	8
6	2	2	1	8	11	9	8	12	9	9	8	8	7	8	5	3	3	6	9	8	8	7	5	3	7	12
7	2	3	2	3	2	1	1	2	2	4	8	6	9	6	7	5	5	11	4	8	5	7	8	2	5	11
8	3	2	3	2	1	1	2	2	4	8	6	9	6	7	5	5	8	11	4	8	5	7	8	4	5	11
9	6	4	3	4	4	5	3	5	4	5	7	6	6	6	8	4	8	5	3	3	4	4	4	4	5	8
10	1	1	2	2	2	2	1	1	1	2	2	3	4	4	4	6	6	6	5	3	2	1	2	4	3	6
11	4	4	5	4	1	3	7	7	5	6	9	10	8	7	6	8	4	6	5	4	5	1	1	1	5	10
12	1	3	2	1	1	3	6	6	5	5	6	5	7	6	5	5	3	3	3	3	3	2	3	3	4	7
13	1	0	2	1	1	1	1	3	2	1	2	1	1	5	4	4	2	3	4	5	2	4	1	3	2	5
14	3	5	5	4	5	2	2	3	5	5	7	9	8	8	5	3	6	5	8	9	8	7	6	4	6	9
15	6	6	6	5	4	2	3	5	4	6	8	8	7	6	4	4	4	2	0	1	2	0	2	3	4	8
16	4	5	5	0	2	1	1	3	2	6	12	10	10	11	11	9	8	8	4	4	5	6	7	7	6	12
17	7	8	9	9	9	9	5	4	4	6	8	9	8	8	8	7	6	4	3	2	2	4	4	2	6	9
18	1	3	5	8	4	11	10	1	5	6	5	7	6	5	4	4	5	5	4	4	4	3	2	2	5	11
19	1	2	3	1	1	1	3	2	0	1	2	1	0	3	5	6	5	3	8	9	9	4	2	2	3	9
20	4	1	1	2	1	1	3	1	1	2	3	2	3	3	2	4	4	4	3	2	1	1	1	1	2	4
21	4	1	1	2	1	1	3	1	1	2	3	2	3	3	2	4	4	4	3	2	1	1	1	1	2	4
22	3	2	6	6	5	2	1	4	6	3	4	4	4	4	3	6	5	5	5	6	4	3	2	2	4	6
23	4	5	4	3	3	4	3	2	2	4	1	2	4	4	3	4	5	6	6	7	5	3	1	2	4	7
24	1	1	4	4	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	10	9	8	8	( )	4	10
25	5	4	3	4	3	2	(PF)	(PF)	1	3	4	4	4	6	6	7	7	6	4	5	1	1	1	1	4	7
26	1	1	3	0	3	1	1	1	0	1	1	2	2	1	2	3	1	1	2	4	4	1	1	3	2	4
27	2	2	3	0	(CM)	1	1	1	2	3	1	1	1	2	3	4	4	1	4	1	4	5	3	2	2	5
28	3	3	6	5	5	2	4	5	4	7	10	8	9	8	9	11	11	10	7	6	8	10	9	9	7	11
29	8	8	4	4	2	4	2	3	7	7	3	3	5	8	9	12	11	12	11	6	6	1	5	5	6	12
30	3	6	4	4	7	1	3	2	4	5	4	9	11	8	6	4	2	4	2	4	3	3	2	1	4	11
AV	3	3	4	3	3	3	3	3	3	4	5	5	6	6	5	5	5	6	5	5	4	4	3	3	4	
PK	8	8	9	9	11	11	10	12	9	9	12	10	11	11	11	12	11	12	11	10	9	10	9	9		12

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	263	227	235	112	237	208	34	71	42	72	352	345	351	329	294	285	270	294	299	239	214	121	82	141	293
2	114	130	151	111	136	183	49	262	286	312	323	286	249	51	94	170	149	101	145	100	126	121	122	189	136
3	169	155	163	174	189	190	193	207	215	211	210	216	215	222	254	183	185	177	182	151	192	173	239	182	193
4	173	201	205	180	240	(CM)	53	90	33	219	207	207	236	244	235	227	215	226	204	200	168	108	100	83	193
5	173	201	205	180	240	(CM)	53	90	33	219	207	207	236	244	235	227	215	226	204	200	168	108	100	83	193
6	273	239	256	171	158	165	151	141	156	153	153	166	143	156	215	180	220	142	175	185	190	190	213	229	182
7	70	65	89	74	49	151	84	115	210	221	209	226	307	311	295	295	279	287	287	139	148	130	150	70	147
8	65	89	74	49	151	84	115	210	221	209	226	307	311	295	295	279	302	287	287	139	148	130	150	136	185
9	126	145	172	143	137	174	158	150	166	176	184	177	169	148	245	324	101	147	125	101	105	109	115	136	147
10	263	227	235	112	237	208	34	71	42	72	352	345	351	329	294	285	270	294	299	239	214	121	82	141	293
11	159	138	122	119	68	121	178	170	140	186	201	217	199	175	215	169	194	211	316	343	289	341	246	333	184
12	(CM)	293	238	90	343	325	319	304	311	291	317	323	331	328	317	332	338	317	308	289	265	275	270	261	307
13	240	219	231	223	204	135	191	84	119	51	29	283	270	287	264	309	92	184	146	152	246	324	(CM)	101	208
14	111	147	188	132	139	310	158	158	144	139	142	146	145	174	151	209	190	199	197	201	216	215	162	178	169
15	200	184	187	194	184	185	186	198	201	202	198	207	197	165	151	133	118	71	14	228	219	(CM)	253	251	190
16	101	112	128	262	261	(CM)	180	102	45	198	204	197	201	202	209	201	200	203	191	188	187	182	179	176	185
17	191	180	169	169	170	169	166	127	167	188	197	198	201	201	214	225	240	251	224	204	143	154	160	151	185
18	104	243	182	189	191	180	170	99	191	217	212	220	223	221	205	233	227	237	211	208	208	102	127	144	194
19	194	177	212	205	218	187	242	290	330	356	12	58	(CM)	204	202	194	194	186	173	167	167	137	86	109	187
20	134	235	63	225	211	(CM)	76	61	3	340	337	339	297	6	343	337	333	353	4	197	209	207	212	225	315
21	134	235	63	225	211	(CM)	76	61	3	340	337	339	297	6	343	337	333	353	4	197	209	207	212	225	315
22	291	145	146	140	153	135	7	169	134	150	114	172	156	153	186	206	213	218	200	199	140	117	97	97	157
23	122	133	122	116	130	129	105	85	103	196	209	184	175	230	241	203	205	204	199	196	207	(CM)	68	118	161
24	114	31	35	36	38	66	136	147	160	156	168	160	144	145	180	103	115	134	126	202	204	204	201	( )	137
25	105	163	161	206	161	96	(PF)	(PF)	5	302	297	277	299	307	277	280	290	305	246	210	90	161	(CM)	182	243
26	186	253	138	219	194	233	258	73	29	331	341	316	339	338	351	47	325	318	121	164	183	73	255	120	296
27	127	114	131	90	197	210	188	251	233	301	30	70	49	81	348	333	332	14	141	192	166	143	165	(CM)	134
28	145	153	178	187	146	98	95	80	134	181	197	197	214	211	191	188	163	158	161	140	155	169	168	180	164
29	204	180	200	358	294	300	300	188	163	221	217	220	158	161	195	165	160	177	176	166	178	330	224	140	197
30	156	166	146	136	188	112	142	115	132	129	148	194	194	194	198	197	180	84	319	264	254	284	247	230	177
PV	155	175	165	155	184	162	131	126	131	205	219	226	228	223	240	232	218	221	205	189	187	151	167	156	191

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	292	292	252	270	301	222	60	85	49	79	351	343	347	326	290	283	268	292	297	264	229	83	75	112	312
2	106	118	144	162	129	150	13	267	291	313	320	286	250	49	94	169	149	101	146	107	128	125	118	194	136
3	173	153	163	175	194	194	197	209	218	214	213	217	218	225	255	186	187	181	184	160	192	173	239	187	196
4	233	180	207	79	56	315	(CM)	87	44	218	209	210	239	246	237	229	218	229	207	202	199	101	106	120	197
5	233	180	207	79	56	315	(CM)	87	44	218	209	210	239	246	237	229	218	229	207	202	199	101	106	120	197
6	302	305	278	172	159	164	151	140	157	153	154	166	142	158	218	177	223	141	174	184	186	189	202	230	181
7	211	219	132	196	90	222	94	120	206	221	212	228	309	308	292	293	277	284	297	139	150	132	153	211	210
8	219	132	196	90	222	94	120	206	221	212	228	309	308	292	293	277	301	284	297	139	150	132	153	140	211
9	130	148	179	147	141	176	165	152	167	177	184	177	169	147	248	328	101	145	158	120	104	108	115	140	151
10	292	292	252	270	301	222	60	85	49	79	351	343	347	326	290	283	268	292	297	264	229	83	75	112	312
11	174	138	135	134	97	122	182	172	143	187	204	220	203	176	215	169	196	214	319	341	291	349	247	325	188
12	121	296	248	119	338	324	319	305	313	292	317	323	331	327	317	332	340	319	313	290	267	282	275	275	308
13	280	(CM)	338	236	229	117	81	88	120	56	32	285	267	290	261	308	85	188	149	152	229	325	292	104	247
14	114	145	184	135	136	207	172	159	146	141	144	147	145	177	152	209	192	201	199	202	217	221	166	197	171
15	202	191	191	193	188	206	189	198	202	202	200	208	198	164	151	134	117	76	40	240	224	(CM)	275	254	192
16	107	115	120	262	266	(CM)	185	99	54	199	204	199	202	204	210	203	201	204	195	177	179	180	175	172	183
17	178	173	167	166	169	168	169	138	169	190	198	199	201	202	215	227	243	255	243	214	122	132	144	150	184
18	111	221	197	191	190	181	172	109	193	219	214	221	224	223	206	234	228	240	216	207	204	102	119	138	194
19	187	180	209	233	218	163	169	276	315	356	21	62	(CM)	201	207	194	197	192	170	164	166	158	103	107	183
20	113	238	66	54	241	214	54	90	0	339	338	334	292	7	347	334	330	352	2	55	(CM)	192	236	294	346
21	113	238	66	54	241	214	54	90	0	339	338	334	292	7	347	334	330	352	2	55	(CM)	192	236	294	346
22	293	122	137	130	145	137	(CM)	178	134	149	114	170	156	153	190	206	213	220	200	192	152	164	121	100	160
23	107	121	115	110	117	113	105	86	103	198	214	183	178	232	242	203	206	205	201	195	199	212	(CM)	139	166
24	121	38	41	45	53	68	115	139	158	136	142	129	124	118	145	98	115	129	126	207	209	212	202	( )	125
25	102	144	161	212	201	133	(PF)	(PF)	315	299	294	273	295	305	276	278	289	302	261	217	199	225	(CM)	113	248
26	(CM)	297	187	(CM)	223	341	343	65	21	326	336	314	332	336	349	49	328	317	95	143	162	68	268	111	349
27	130	126	172	92	190	228	156	274	249	290	348	71	55	81	349	330	330	12	111	165	163	156	187	205	152
28	166	169	183	188	154	129	106	83	135	183	199	198	215	214	191	191	163	159	162	144	156	169	169	180	168
29	207	183	206	356	307	303	322	199	166	225	215	220	159	164	196	167	160	177	176	166	179	312	229	141	200
30	164	166	148	145	194	125	139	125	136	131	149	196	195	196	200	198	178	84	42	268	258	287	270	253	176
PV	167	175	175	151	183	177	127	131	141	205	224	227	230	226	240	232	220	223	201	184	190	158	178	162	195

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	309	29	265	282	351	244	195	214	66	87	354	346	351	331	296	289	274	299	305	292	266	177	76	95	308
2	110	115	151	186	172	182	(CM)	269	289	316	337	294	260	53	99	170	152	107	150	123	138	138	133	199	156
3	177	159	166	177	197	196	199	211	218	215	214	218	220	226	251	191	188	186	188	170	193	176	239	194	198
4	346	91	165	15	104	59	173	122	69	219	210	212	240	247	237	231	219	232	212	209	211	184	172	210	197
5	346	91	165	15	104	59	173	122	69	219	210	212	240	247	237	231	219	232	212	209	211	184	172	210	197
6	317	342	327	174	161	165	158	145	161	156	158	168	149	164	218	182	221	146	175	184	184	194	201	219	179
7	205	205	191	204	204	242	132	134	202	224	215	228	310	314	299	298	283	289	311	143	156	140	159	205	217
8	205	191	204	204	242	132	134	202	224	215	228	310	314	299	298	283	306	289	311	143	156	140	159	146	220
9	139	152	186	157	151	181	180	161	171	180	186	179	171	153	248	325	102	145	166	148	121	121	135	146	160
10	309	29	265	282	351	244	195	214	66	87	354	346	351	331	296	289	274	299	305	292	266	177	76	95	308
11	185	154	150	152	164	146	190	174	152	189	205	222	206	180	216	172	201	215	318	349	300	3	238	322	196
12	113	294	235	140	339	331	329	315	323	301	323	331	336	333	325	338	347	329	336	303	284	302	291	295	318
13	299	305	4	260	259	138	100	100	125	66	36	294	267	289	267	315	76	190	153	149	207	323	300	107	275
14	118	145	176	139	140	173	172	165	154	149	151	150	148	180	159	210	195	203	202	202	217	228	176	207	173
15	204	198	197	196	193	217	192	200	204	203	201	208	199	167	157	138	120	89	30	255	245	14	296	252	198
16	119	119	115	222	275	309	233	85	79	201	205	199	204	205	210	204	202	205	201	183	182	183	171	163	188
17	164	165	168	168	168	169	172	151	177	193	199	200	202	204	215	227	243	256	256	227	108	123	130	160	185
18	151	210	200	194	191	182	173	137	197	219	215	221	225	224	208	237	229	239	223	215	214	107	125	127	197
19	193	152	184	234	266	202	99	280	270	348	27	70	158	202	210	199	199	199	165	158	164	170	146	133	184
20	99	207	251	11	267	254	198	207	350	348	349	336	298	12	353	340	336	359	8	35	56	171	263	326	328
21	99	207	251	11	267	254	198	207	350	348	349	336	298	12	353	340	336	359	8	35	56	171	263	326	328
22	299	97	132	126	141	153	176	191	139	153	121	172	160	157	193	206	212	220	202	190	170	186	149	126	166
23	110	116	125	117	129	124	130	99	112	201	219	184	183	233	239	204	206	208	206	202	206	205	211	185	175
24	222	28	35	40	51	65	104	122	131	121	117	109	106	104	121	102	115	126	124	212	214	216	214	( )	117
25	97	130	158	218	218	188	(PF)	(PF)	266	305	299	280	302	311	283	284	295	308	286	241	231	265	252	53	265
26	114	0	233	69	127	291	305	27	319	327	343	323	333	339	356	52	338	328	92	139	159	160	277	118	358
27	146	176	184	27	(CM)	307	131	321	273	294	328	75	70	90	354	336	336	17	125	160	162	172	199	205	129
28	176	181	188	190	164	156	123	96	148	186	201	199	216	215	193	194	167	163	168	157	163	172	173	183	175
29	207	186	213	358	321	312	336	211	170	225	214	224	165	168	197	169	163	178	177	168	181	297	229	148	202
30	174	174	153	166	198	164	147	142	145	138	153	198	195	198	201	197	179	92	85	278	273	299	294	262	182
PV	162	152	187	175	190	192	167	166	163	206	224	229	227	227	241	235	222	224	203	192	193	181	197	176	201

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	263	227	235	112	237	208	34	71	42	72	352	345	351	329	294	285	270	294	299	239	214	121	82	141	291	1.0
2	134	235	63	225	211	***	76	61	3	340	337	339	297	6	343	337	333	353	4	197	209	207	212	225	335	0.7
3	173	201	205	180	240	***	53	90	33	219	207	207	236	244	235	227	215	226	204	200	168	108	100	83	213	1.7
4	70	65	89	74	49	151	84	115	210	221	209	226	307	311	295	295	279	287	287	139	148	130	150	70	244	0.7
5	136	126	145	172	143	137	174	158	150	166	176	184	177	169	148	245	324	101	147	125	101	105	109	115	155	2.0
6	112	115	109	150	162	169	***	305	62	34	38	4	274	154	167	199	199	158	221	286	248	144	184	224	164	0.9
7	240	132	233	186	175	197	310	94	25	298	332	***	341	342	348	335	339	346	325	193	212	***	155	145	299	0.4
8	102	130	114	118	122	171	63	173	121	119	112	149	125	200	210	220	217	223	210	98	118	99	86	91	152	1.2
9	95	98	110	106	109	120	93	70	75	209	238	132	128	233	147	117	131	138	182	184	179	164	78	135	136	1.6
10	159	138	122	119	68	121	178	170	140	186	201	217	199	175	215	169	194	211	316	343	289	341	246	333	191	2.0
11	***	293	238	90	343	325	319	304	311	291	317	323	331	328	317	332	338	317	308	289	265	275	270	261	313	2.2
12	240	219	231	223	204	135	191	84	119	51	29	283	270	287	264	309	92	184	146	152	246	324	***	101	219	0.2
13	111	147	188	132	139	310	158	158	144	139	142	146	145	174	151	209	190	199	197	201	216	215	162	178	170	2.7
14	200	184	187	194	184	185	186	198	201	202	198	207	197	165	151	133	118	71	14	228	219	***	253	251	189	2.1
15	101	112	128	262	261	***	180	102	45	198	204	197	201	202	209	201	200	203	191	188	187	182	179	176	194	3.1
16	191	180	169	169	170	169	166	127	167	188	197	198	201	201	214	225	240	251	224	204	143	154	160	151	189	3.3
17	104	243	182	189	191	180	170	99	191	217	212	220	223	221	205	233	227	237	211	208	208	102	127	144	201	2.4
18	194	177	212	205	218	187	242	290	330	356	12	58	***	204	202	194	194	186	173	167	167	137	86	109	178	1.5
19	114	130	151	111	136	183	49	262	286	312	323	286	249	51	94	170	149	101	145	100	126	121	122	189	134	0.8
20	291	145	146	140	153	135	7	169	134	150	114	172	156	153	186	206	213	218	200	199	140	117	97	97	162	1.8
21	122	133	122	116	130	129	105	85	103	196	209	184	175	230	241	203	205	204	199	196	207	***	68	118	170	1.5
22	114	31	35	36	38	66	136	147	160	156	168	160	144	145	180	103	115	134	126	202	204	204	201	***	152	1.2
23	105	163	161	206	161	96	***	***	5	302	297	277	299	307	277	280	290	305	246	210	90	161	***	182	272	1.3
24	186	253	138	219	194	233	258	73	29	331	341	316	339	338	351	47	325	318	121	164	183	73	255	120	348	0.1
25	127	114	131	90	197	210	188	251	233	301	30	70	49	81	348	333	332	14	141	192	166	143	165	***	130	0.2
26	145	153	178	187	146	98	95	80	134	181	197	197	214	211	191	188	163	158	161	140	155	169	168	180	173	3.7
27	204	180	200	358	294	300	300	188	163	221	217	220	158	161	195	165	160	177	176	166	178	330	224	140	183	2.8
28	169	155	163	174	189	190	193	207	215	211	210	216	215	222	254	183	185	177	182	151	192	173	239	182	196	3.6
29	156	166	146	136	188	112	142	115	132	129	148	194	194	194	198	197	180	84	319	264	254	284	247	230	178	1.9
30	273	239	256	171	158	165	151	141	156	153	153	166	143	156	215	180	220	142	175	185	190	190	213	229	168	3.4
VD	150	154	155	157	165	164	159	149	156	194	199	203	208	204	215	213	210	202	192	187	187	161	163	153	185	
VV	1.1	1.4	1.4	1.2	1.3	1.1	1.0	0.9	1.1	1.6	1.8	2.2	1.9	1.8	2.0	2.0	1.8	1.4	1.6	1.8	1.6	1.2	1.2	1.2		1.4

TOTAL NUMBER OF OBSERVATIONS = 704

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	292	292	252	270	301	222	60	85	49	79	351	343	347	326	290	283	268	292	297	264	229	83	75	112	298	1.4
2	113	238	66	54	241	214	54	90	0	339	338	334	292	7	347	334	330	352	2	55	***	192	236	294	343	1.0
3	233	180	207	79	56	315	***	87	44	218	209	210	239	246	237	229	218	229	207	202	199	101	106	120	218	2.4
4	211	219	132	196	90	222	94	120	206	221	212	228	309	308	292	293	277	284	297	139	150	132	153	211	238	1.5
5	140	130	148	179	147	141	176	165	152	167	177	184	177	169	147	248	328	101	145	158	120	104	108	115	153	2.9
6	113	112	108	154	141	148	153	297	71	40	41	3	286	155	166	199	199	158	220	295	265	139	150	217	152	1.2
7	268	125	261	217	158	158	287	107	27	294	330	189	341	344	343	333	336	346	329	157	204	***	148	141	309	0.4
8	133	125	109	119	126	217	53	192	121	121	122	160	131	202	213	223	221	225	214	100	123	114	101	107	161	1.7
9	110	100	110	115	109	120	120	84	86	210	238	130	120	243	142	118	129	137	175	174	179	184	123	168	143	2.3
10	174	138	135	134	97	122	182	172	143	187	204	220	203	176	215	169	196	214	319	341	291	349	247	325	193	2.9
11	121	296	248	119	338	324	319	305	313	292	317	323	331	327	317	332	340	319	313	290	267	282	275	275	314	2.9
12	280	***	338	236	229	117	81	88	120	56	32	285	267	290	261	308	85	188	149	152	229	325	292	104	234	0.3
13	114	145	184	135	136	207	172	159	146	141	144	147	145	177	152	209	192	201	199	202	217	221	166	197	172	3.9
14	202	191	191	193	188	206	189	198	202	202	200	208	198	164	151	134	117	76	40	240	224	***	275	254	191	2.9
15	107	115	120	262	266	***	185	99	54	199	204	199	202	204	210	203	201	204	195	177	179	180	175	172	191	4.4
16	178	173	167	166	169	168	169	138	169	190	198	199	201	202	215	227	243	255	243	214	122	132	144	150	187	4.7
17	111	221	197	191	190	181	172	109	193	219	214	221	224	223	206	234	228	240	216	207	204	102	119	138	201	3.4
18	187	180	209	233	218	163	169	276	315	356	21	62	***	201	207	194	197	192	170	164	166	158	103	107	174	2.1
19	106	118	144	162	129	150	13	267	291	313	320	286	250	49	94	169	149	101	146	107	128	125	118	194	133	1.3
20	293	122	137	130	145	137	***	178	134	149	114	170	156	153	190	206	213	220	200	192	152	164	121	100	164	2.7
21	107	121	115	110	117	113	105	86	103	198	214	183	178	232	242	203	206	205	201	195	199	212	***	139	167	2.2
22	121	38	41	45	53	68	115	139	158	136	142	129	124	118	145	98	115	129	126	207	209	212	202	***	145	1.8
23	102	144	161	212	201	133	***	***	315	299	294	273	295	305	276	278	289	302	261	217	199	225	***	113	268	1.9
24	***	297	187	***	223	341	343	65	21	326	336	314	332	336	349	49	328	317	95	143	162	68	268	111	39	0.2
25	130	126	172	92	190	228	156	274	249	290	348	71	55	81	349	330	330	12	111	165	163	156	187	205	159	0.3
26	166	169	183	188	154	129	106	83	135	183	199	198	215	214	191	191	163	159	162	144	156	169	169	180	174	5.3
27	207	183	206	356	307	303	322	199	166	225	215	220	159	164	196	167	160	177	176	166	179	312	229	141	186	3.9
28	173	153	163	175	194	194	197	209	218	214	213	217	218	225	255	186	187	181	184	160	192	173	239	187	198	5.2
29	164	166	148	145	194	125	139	125	136	131	149	196	195	196	200	198	178	84	42	268	258	287	270	253	181	2.6
30	302	305	278	172	159	164	151	140	157	153	154	166	142	158	218	177	223	141	174	184	186	189	202	230	167	4.9
VD	152	148	155	160	162	164	160	153	159	196	201	204	208	206	215	215	211	204	191	184	186	170	168	157	185	
VV	1.6	2.0	2.2	1.9	1.8	1.4	1.4	1.3	1.6	2.1	2.5	2.9	2.7	2.4	2.7	2.7	2.4	2.0	2.5	2.8	2.8	1.9	1.8	1.7		2.0

TOTAL NUMBER OF OBSERVATIONS = 705

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	309	29	265	282	351	244	195	214	66	87	354	346	351	331	296	289	274	299	305	292	266	177	76	95	308	1.7
2	99	207	251	11	267	254	198	207	350	348	349	336	298	12	353	340	336	359	8	35	56	171	263	326	347	1.2
3	346	91	165	15	104	59	173	122	69	219	210	212	240	247	237	231	219	232	212	209	211	184	172	210	217	2.8
4	205	205	191	204	204	242	132	134	202	224	215	228	310	314	299	298	283	289	311	143	156	140	159	205	234	2.2
5	146	139	152	186	157	151	181	180	161	171	180	186	179	171	153	248	325	102	145	166	148	121	121	135	161	3.7
6	129	129	126	192	152	143	169	284	80	52	48	5	295	158	169	200	199	161	227	302	270	143	141	197	166	1.3
7	291	81	161	***	194	142	236	122	32	302	335	161	349	350	345	342	344	346	330	143	199	169	188	144	326	0.5
8	***	211	103	123	115	243	21	212	130	130	147	170	145	210	221	225	223	227	218	112	134	133	125	136	178	2.1
9	141	114	125	127	115	130	188	118	130	214	239	135	116	262	138	122	133	142	172	169	180	194	186	191	158	2.5
10	185	154	150	152	164	146	190	174	152	189	205	222	206	180	216	172	201	215	318	349	300	3	238	322	196	3.6
11	113	294	235	140	339	331	329	315	323	301	323	331	336	333	325	338	347	329	336	303	284	302	291	295	321	3.4
12	299	305	4	260	259	138	100	100	125	66	36	294	267	289	267	315	76	190	153	149	207	323	300	107	236	0.2
13	118	145	176	139	140	173	172	165	154	149	151	150	148	180	159	210	195	203	202	202	217	228	176	207	175	4.9
14	204	198	197	196	193	217	192	200	204	203	201	208	199	167	157	138	120	89	30	255	245	14	296	252	195	3.4
15	119	119	115	222	275	309	233	85	79	201	205	199	204	205	210	204	202	205	201	183	182	183	171	163	190	5.0
16	164	165	168	168	168	169	172	151	177	193	199	200	202	204	215	227	243	256	256	227	108	123	130	160	187	5.3
17	151	210	200	194	191	182	173	137	197	219	215	221	225	224	208	237	229	239	223	215	214	107	125	127	204	4.3
18	193	152	184	234	266	202	99	280	270	348	27	70	158	202	210	199	199	199	165	158	164	170	146	133	175	2.3
19	110	115	151	186	172	182	***	269	289	316	337	294	260	53	99	170	152	107	150	123	138	138	133	199	144	1.6
20	299	97	132	126	141	153	176	191	139	153	121	172	160	157	193	206	212	220	202	190	170	186	149	126	168	3.2
21	110	116	125	117	129	124	130	99	112	201	219	184	183	233	239	204	206	208	206	202	206	205	211	185	179	2.7
22	222	28	35	40	51	65	104	122	131	121	117	109	106	104	121	102	115	126	124	212	214	216	214	***	143	1.9
23	97	130	158	218	218	188	***	***	266	305	299	280	302	311	283	284	295	308	286	241	231	265	252	53	276	2.3
24	114	0	233	69	127	291	305	27	319	327	343	323	333	339	356	52	338	328	92	139	159	160	277	118	58	0.3
25	146	176	184	27	***	307	131	321	273	294	328	75	70	90	354	336	336	17	125	160	162	172	199	205	178	0.4
26	176	181	188	190	164	156	123	96	148	186	201	199	216	215	193	194	167	163	168	157	163	172	173	183	178	6.5
27	207	186	213	358	321	312	336	211	170	225	214	224	165	168	197	169	163	178	177	168	181	297	229	148	188	4.7
28	177	159	166	177	197	196	199	211	218	215	214	218	220	226	251	191	188	186	188	170	193	176	239	194	200	6.4
29	174	174	153	166	198	164	147	142	145	138	153	198	195	198	201	197	179	92	85	278	273	299	294	262	184	3.1
30	317	342	327	174	161	165	158	145	161	156	158	168	149	164	218	182	221	146	175	184	184	194	201	219	170	5.9
VD	162	153	165	170	170	175	170	166	166	198	202	205	209	206	216	216	212	204	192	186	190	181	182	172	189	
VV	1.7	2.3	2.8	2.2	2.3	1.8	2.2	1.8	2.0	2.5	2.8	3.3	2.9	2.7	3.0	3.1	2.7	2.4	2.8	3.3	3.4	2.5	2.2	2.0		2.4

TOTAL NUMBER OF OBSERVATIONS = 713

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	16	15	4	8	17	12	11	21	31	27	33	23	22	21	22	15	13	10	7	6	3	19	17	8	16	33
2	5	5	7	10	8	15	17	11	12	18	28	12	11	10	18	10	12	6	7	8	9	11	14	11	11	28
3	11	7	6	6	9	11	9	11	10	11	9	9	10	12	15	10	11	9	9	14	13	7	11	12	10	15
4	31	22	13	16	17	(CM)	13	15	21	20	12	15	20	18	19	12	19	10	6	5	16	10	10	8	15	31
5	31	22	13	16	17	(CM)	13	15	21	20	12	15	20	18	19	12	19	10	6	5	16	10	10	8	15	31
6	16	14	10	12	8	9	10	7	8	9	9	9	9	9	10	14	13	7	5	7	7	6	11	7	9	16
7	16	28	9	26	36	27	21	25	40	20	11	17	12	15	11	11	10	9	13	7	8	8	11	16	17	40
8	28	9	26	36	27	21	25	40	20	11	17	12	15	11	11	10	8	9	13	7	8	8	11	18	17	40
9	8	11	12	12	10	18	16	9	13	11	12	15	16	13	12	14	8	9	28	8	5	8	5	18	12	28
10	16	15	4	8	17	12	11	21	31	27	33	23	22	21	22	15	13	10	7	6	3	19	17	8	16	33
11	5	5	8	11	13	7	7	6	14	16	12	10	10	14	15	8	16	12	10	12	7	17	11	17	11	17
12	(CM)	14	23	11	5	8	9	8	9	9	8	9	8	8	8	9	11	9	11	6	6	5	3	4	9	23
13	4	7	10	3	11	17	11	9	20	29	30	37	33	12	19	11	12	12	8	6	9	9	(CM)	5	14	37
14	7	7	8	8	9	21	15	14	11	12	11	9	9	9	14	25	9	13	9	8	10	9	6	18	11	25
15	8	5	5	10	15	24	12	12	11	12	12	11	12	10	10	8	8	8	8	6	18	(CM)	7	18	11	24
16	19	13	7	14	11	(CM)	21	22	15	20	11	12	11	12	12	12	11	9	6	6	6	17	4	3	12	22
17	5	5	4	4	4	4	8	8	8	10	11	13	14	12	14	10	11	6	4	11	7	10	7	20	9	20
18	11	23	19	7	13	7	8	23	18	12	15	12	13	17	21	20	14	10	5	3	22	10	7	16	14	23
19	10	12	24	17	17	14	10	14	21	27	34	23	(CM)	12	8	11	14	26	6	7	14	18	9	5	15	34
20	9	33	18	26	10	(CM)	9	12	17	24	20	30	34	25	26	16	13	9	6	11	14	7	15	25	18	34
21	9	33	18	26	10	(CM)	9	12	17	24	20	30	34	25	26	16	13	9	6	11	14	7	15	25	18	34
22	17	9	7	9	12	24	13	14	12	23	19	15	21	11	23	13	12	7	4	5	6	12	7	4	12	24
23	9	7	8	7	7	7	6	9	14	15	31	29	21	15	23	17	11	7	4	5	23	(CM)	20	17	14	31
24	18	12	10	21	13	19	12	23	7	8	4	7	6	24	39	9	10	11	7	6	6	6	10	( )	13	39
25	10	8	15	7	29	12	(PF)	(PF)	22	19	15	18	19	14	14	13	10	8	7	5	23	32	(CM)	8	15	32
26	12	14	8	12	12	13	16	12	27	24	33	25	36	30	18	11	22	8	12	8	23	12	17	7	17	36
27	4	5	16	15	14	11	9	10	9	13	9	15	9	15	14	12	11	8	12	11	8	10	21	(CM)	11	21
28	17	16	12	18	9	18	10	10	14	17	16	12	14	14	13	12	10	10	7	5	5	8	8	8	12	18
29	10	13	20	8	17	16	19	23	10	10	21	21	11	15	13	9	9	7	9	12	21	25	19	13	15	25
30	16	6	8	11	9	12	8	11	8	10	11	14	13	13	13	16	18	7	10	7	6	6	9	8	10	18
AV	13	13	12	13	14	14	12	15	16	17	17	17	17	15	17	13	12	10	8	7	11	12	11	12	13	
PK	31	33	26	36	36	27	25	40	40	29	34	37	36	30	39	25	22	26	28	14	23	32	21	25		40

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	12	15	4	11	12	14	17	18	27	26	34	22	20	21	18	13	10	10	6	6	6	16	12	6	15	34
2	4	4	4	9	6	23	19	13	10	15	22	11	10	8	14	9	11	4	4	6	3	6	13	8	10	23
3	11	7	5	5	9	9	9	9	9	9	9	8	8	10	14	9	11	8	8	11	11	7	12	11	9	14
4	19	19	9	13	11	20	(CM)	12	20	21	11	14	19	16	18	11	15	9	4	3	29	21	19	54	17	54
5	19	19	9	13	11	20	(CM)	12	20	21	11	14	19	16	18	11	15	9	4	3	29	21	19	54	17	54
6	7	28	14	12	8	8	9	6	7	8	9	8	8	8	10	13	11	6	3	5	5	3	11	8	9	28
7	63	59	23	40	25	20	22	24	35	19	10	15	10	13	9	9	8	8	13	6	6	7	10	63	22	63
8	59	23	40	25	20	22	24	35	19	10	15	10	13	9	9	8	7	8	13	6	6	7	10	16	17	59
9	6	10	13	12	8	12	17	7	11	10	11	14	14	11	11	14	7	7	29	10	3	5	3	16	11	29
10	12	15	4	11	12	14	17	18	27	26	34	22	20	21	18	13	10	10	6	6	6	16	12	6	15	34
11	5	4	8	10	31	6	6	5	13	16	11	8	9	13	14	7	14	10	10	11	6	14	11	16	11	31
12	11	11	14	11	4	8	8	6	8	7	6	9	7	8	7	8	10	9	13	6	5	4	2	3	8	14
13	5	(CM)	7	6	7	9	16	9	18	22	22	41	28	9	17	9	11	11	6	4	8	8	15	4	13	41
14	5	4	8	7	5	17	10	14	10	11	10	8	8	8	12	26	8	11	8	7	8	7	5	16	10	26
15	6	5	4	7	13	18	13	11	9	11	11	9	11	8	9	6	6	7	11	6	12	(CM)	9	18	10	18
16	22	10	6	12	10	(CM)	21	16	15	24	9	11	10	11	10	11	11	9	4	2	3	7	2	2	10	24
17	4	3	2	1	2	2	7	8	7	10	10	12	13	11	13	10	9	6	5	8	6	6	5	17	7	17
18	13	22	8	5	10	6	7	23	16	11	14	11	13	15	19	17	12	9	3	2	13	7	6	5	11	23
19	13	7	24	18	25	13	24	15	24	35	32	21	(CM)	12	6	8	13	25	4	4	12	13	10	4	16	35
20	10	9	14	13	16	13	13	16	23	21	19	22	25	21	26	15	11	8	5	21	(CM)	8	12	15	15	26
21	10	9	14	13	16	13	13	16	23	21	19	22	25	21	26	15	11	8	5	21	(CM)	8	12	15	15	26
22	13	12	5	6	11	18	(CM)	12	10	24	16	12	17	9	19	11	11	6	2	4	8	20	8	4	11	24
23	6	7	5	5	4	3	4	6	11	13	27	25	17	13	19	15	10	5	2	3	13	34	(CM)	12	11	34
24	24	5	3	10	7	16	13	21	11	8	8	7	10	16	32	9	9	5	7	4	4	3	6	( )	10	32
25	8	7	5	5	15	17	(PF)	(PF)	36	17	13	15	17	13	13	11	8	7	7	4	29	33	(CM)	10	14	36
26	(CM)	15	12	(CM)	10	11	10	11	25	19	32	23	37	23	16	9	24	8	7	4	12	14	11	5	15	37
27	4	6	13	30	14	19	5	11	16	11	12	12	11	14	13	10	8	7	4	8	5	6	18	19	12	30
28	8	15	10	14	9	23	10	7	14	16	17	11	12	12	13	11	9	9	7	5	5	7	7	7	11	23
29	9	12	15	6	14	14	19	17	9	9	16	21	10	14	12	8	7	7	8	12	26	25	17	12	13	26
30	11	6	7	14	9	11	7	12	8	8	11	12	11	12	11	14	17	5	10	6	5	5	8	10	10	17
AV	14	13	10	12	12	14	13	13	16	16	16	15	15	13	15	11	11	8	7	7	10	12	10	15	12	
PK	63	59	40	40	31	23	24	35	36	35	34	41	37	23	32	26	24	25	29	21	29	34	19	63		63

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	10	10	5	15	19	6	12	20	27	21	35	23	16	19	17	12	9	9	5	6	6	18	11	5	14	35
2	5	2	4	6	9	18	(CM)	10	10	13	22	10	9	7	13	8	9	3	3	6	3	6	12	8	9	22
3	11	6	4	5	8	9	7	8	7	8	7	7	7	9	14	8	11	7	7	8	10	5	11	10	8	14
4	11	11	12	9	7	18	11	13	24	21	9	12	15	14	16	9	13	8	3	2	28	54	47	30	17	54
5	11	11	12	9	7	18	11	13	24	21	9	12	15	14	16	9	13	8	3	2	28	54	47	30	17	54
6	8	6	10	11	8	7	8	6	7	7	9	7	6	7	8	11	10	5	3	3	4	2	9	8	7	11
7	18	13	19	21	19	21	34	26	30	18	8	14	9	12	8	9	8	7	16	5	4	6	8	18	15	34
8	13	19	21	19	21	34	26	30	18	8	14	9	12	8	9	8	6	7	16	5	4	6	8	14	14	34
9	5	9	10	11	7	11	14	6	11	9	9	12	12	10	9	13	5	7	22	9	4	3	3	14	9	22
10	10	10	5	15	19	6	12	20	27	21	35	23	16	19	17	12	9	9	5	6	6	18	11	5	14	35
11	4	6	5	11	34	10	5	4	11	15	9	6	7	12	11	7	12	9	9	11	6	13	15	18	10	34
12	11	11	16	9	5	6	8	6	8	7	5	7	6	6	6	7	10	8	10	6	5	3	2	2	7	16
13	4	4	4	6	7	5	12	8	17	20	26	40	30	8	16	7	10	8	4	3	6	8	14	3	11	40
14	3	3	7	5	4	19	6	12	9	9	9	7	7	7	11	26	7	8	6	5	6	6	5	12	8	26
15	4	4	3	5	10	19	10	9	8	9	9	8	9	8	8	5	5	7	8	6	8	30	5	20	9	30
16	18	7	4	14	11	22	26	9	15	25	8	9	9	10	9	10	9	7	4	2	1	3	1	2	10	26
17	3	2	1	1	1	2	6	8	7	9	9	10	12	9	11	8	8	5	4	10	7	4	4	12	6	12
18	12	15	6	4	8	5	5	24	15	9	13	10	12	13	15	15	10	8	2	1	8	8	8	4	10	24
19	16	10	11	10	13	18	12	10	37	35	32	30	34	11	6	6	11	26	4	4	6	9	29	14	16	37
20	6	10	10	7	9	13	13	22	35	19	20	21	23	24	25	14	10	8	5	19	13	7	12	17	15	35
21	6	10	10	7	9	13	13	22	35	19	20	21	23	24	25	14	10	8	5	19	13	7	12	17	15	35
22	8	9	5	5	9	15	20	10	8	15	15	10	17	8	16	10	9	5	2	2	8	21	11	8	10	21
23	4	3	4	7	7	5	9	7	14	11	26	28	16	11	18	14	9	3	3	2	4	8	27	15	11	28
24	41	13	11	6	6	6	14	16	18	8	3	8	8	8	27	9	6	3	8	2	2	2	3	( )	10	41
25	4	5	6	3	8	14	(PF)	(PF)	26	16	13	14	14	12	11	11	8	6	5	2	30	22	15	9	12	30
26	19	13	8	8	17	15	9	10	31	20	27	21	32	24	15	9	20	8	5	4	6	17	12	6	15	32
27	10	12	9	24	(CM)	15	6	14	12	7	11	13	8	13	12	9	7	7	5	5	4	4	10	9	10	24
28	6	11	8	11	7	23	11	9	12	15	14	10	11	12	11	10	7	8	6	4	5	6	7	7	10	23
29	9	11	12	6	13	13	15	15	9	7	15	21	10	12	11	7	6	6	7	12	24	32	16	11	13	32
30	10	7	6	12	8	11	5	10	7	8	10	11	10	11	10	14	15	4	15	5	5	4	8	12	9	15
AV	10	9	8	9	11	13	12	13	17	14	15	14	14	12	13	10	9	7	7	6	9	13	13	12	11	
PK	41	19	21	24	34	34	34	30	37	35	35	40	34	24	27	26	20	26	22	19	30	54	47	30		54

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	16	14	14	13	13	13	12	14	19	23	25	26	27	28	28	28	27	26	23	20	18	16	14	14	20	28
2	8	8	9	8	8	7	8	9	11	14	18	17	9	14	18	17	17	15	13	11	10	11	11	10	12	18
3	3	3	2	3	4	3	3	3	3	4	4	6	3	4	6	4	5	3	3	3	3	3	3	1	3	6
4	12	12	12	12	11	11	12	15	21	26	27	28	29	30	30	29	29	27	24	21	20	18	17	17	20	30
5	12	12	12	12	11	11	12	15	21	26	27	28	29	30	30	29	29	27	24	21	20	18	17	17	20	30
6	3	3	3	8	10	10	7	7	11	11	11	10	8	8	9	9	8	8	8	7	7	7	6	5	8	11
7	17	16	16	16	16	17	18	19	24	23	24	27	27	28	25	25	25	17	13	13	13	12	12	17	19	28
8	16	16	16	16	17	18	19	24	23	24	27	27	28	25	25	25	23	17	13	13	13	12	12	12	19	28
9	11	11	12	12	12	12	13	14	16	18	19	22	23	22	18	13	11	12	11	11	10	9	9	12	14	23
10	16	14	14	13	13	13	12	14	19	23	25	26	27	28	28	28	27	26	23	20	18	16	14	14	20	28
11	14	14	13	14	13	13	14	16	16	20	18	12	16	21	21	19	19	19	16	12	10	9	9	9	15	21
12	9	9	9	9	9	9	8	7	7	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	7	9
13	5	6	4	4	4	3	3	6	9	11	13	14	16	11	10	7	6	6	5	4	5	4	4	4	7	16
14	4	4	3	1	1	2	3	4	6	7	6	6	6	4	4	6	5	4	4	3	3	3	2	3	4	7
15	3	3	3	3	2	2	2	5	6	8	8	9	8	8	6	4	4	4	4	3	3	3	3	3	5	9
16	3	4	4	4	3	3	3	3	8	14	17	18	18	19	20	20	19	18	16	13	12	12	13	13	12	20
17	12	12	12	11	11	11	11	12	14	16	18	20	21	22	22	21	19	17	16	14	14	14	13	12	15	22
18	11	11	12	14	13	13	12	12	14	17	17	18	18	21	20	20	20	18	16	13	12	11	10	11	15	21
19	10	11	9	9	8	8	8	9	13	18	21	20	20	17	14	12	9	9	9	9	9	9	8	8	12	21
20	14	13	10	10	11	9	10	13	18	22	25	27	28	28	29	27	27	24	22	20	18	17	15	13	19	29
21	14	13	10	10	11	9	10	13	18	22	25	27	28	28	29	27	27	24	22	20	18	17	15	13	19	29
22	9	8	8	8	7	7	8	8	8	12	17	19	21	18	19	21	21	18	15	13	12	11	10	9	13	21
23	9	10	11	10	10	9	10	11	15	19	21	23	23	23	23	23	22	19	17	15	13	12	12	12	15	23
24	11	-24	13	13	13	13	13	12	13	13	13	13	13	13	13	13	13	13	13	16	16	15	15	( )	12	16
25	13	13	13	13	13	14	(PF)	(PF)	4	22	22	24	25	24	26	24	23	22	19	17	15	14	14	11	18	26
26	12	11	10	9	9	8	8	10	14	19	22	23	25	24	24	22	23	21	18	17	16	14	14	13	16	25
27	13	13	14	13	13	13	14	14	14	16	14	16	14	16	18	17	16	14	12	11	11	12	12	12	14	18
28	11	11	11	11	11	11	11	11	13	15	16	17	19	21	21	21	19	18	16	14	16	17	17	17	15	21
29	16	14	12	11	9	8	8	7	7	6	4	6	5	11	11	7	7	8	8	6	4	4	2	2	8	16
30	2	2	2	2	2	2	2	2	4	6	7	11	11	11	11	12	12	10	8	6	6	6	5	4	6	12
AV	10	9	10	10	10	9	9	11	13	16	17	18	18	19	19	18	17	16	14	12	12	11	11	10	13	
PK	17	16	16	16	17	18	19	24	24	26	27	28	29	30	30	29	29	27	24	21	20	18	17	17		30
MN	2	-24	2	1	1	2	2	2	3	4	4	6	3	4	4	4	4	3	3	3	3	3	2	1		

MONTHLY MINIMUM = -24

TEMPERATURE @ 30.4
DEGREE C

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	17	16	15	14	13	13	13	14	18	22	23	24	25	26	27	27	26	24	23	21	19	18	15	16	19	27
2	9	9	10	10	9	8	9	9	11	13	17	17	9	14	17	16	16	15	13	12	11	12	12	7	12	17
3	3	3	3	4	4	4	3	3	3	4	4	5	3	3	6	4	4	3	3	3	4	4	3	2	4	6
4	14	13	13	12	12	12	13	16	20	24	25	26	27	28	28	28	27	26	24	23	21	19	19	18	20	28
5	14	13	13	12	12	12	13	16	20	24	25	26	27	28	28	28	27	26	24	23	21	19	19	18	20	28
6	4	3	4	9	11	11	8	7	9	11	11	11	9	9	9	9	8	8	9	8	8	8	7	6	8	11
7	18	18	18	17	18	18	18	19	23	23	23	26	26	27	24	25	24	17	13	13	13	13	13	18	19	27
8	18	18	17	18	18	18	19	23	23	23	26	26	27	24	25	24	23	17	13	13	13	13	13	12	19	27
9	11	11	12	12	12	13	13	14	16	17	17	19	21	21	18	13	11	12	12	11	11	10	10	12	14	21
10	17	16	15	14	13	13	13	14	18	22	23	24	25	26	27	27	26	24	23	21	19	18	15	16	19	27
11	15	15	14	13	12	13	14	14	14	18	18	13	15	19	19	18	18	19	16	12	9	9	9	9	14	19
12	9	9	9	9	9	9	8	7	7	7	7	7	7	7	6	7	7	7	7	7	6	6	6	6	7	9
13	6	6	5	4	4	3	4	6	8	10	12	13	13	11	9	7	6	6	5	5	5	5	4	4	7	13
14	4	4	4	4	4	4	5	5	6	6	6	6	6	5	4	6	5	4	4	4	4	3	3	3	5	6
15	4	4	3	3	3	3	3	4	6	7	7	8	8	7	6	4	4	4	4	4	4	3	3	3	5	8
16	3	4	5	4	3	3	3	3	8	13	16	16	17	18	18	18	18	18	16	15	14	13	14	14	12	18
17	13	13	13	13	12	12	12	12	14	16	17	18	19	20	20	19	19	18	17	16	15	14	14	14	16	20
18	12	12	13	14	14	13	12	12	13	16	16	17	17	19	18	19	18	18	16	16	14	12	11	12	15	19
19	12	11	11	11	9	9	9	10	13	17	19	19	19	17	16	13	13	11	11	11	11	10	9	9	12	19
20	16	13	12	11	11	10	11	13	17	21	23	25	26	26	27	26	26	24	23	21	19	18	17	15	19	27
21	16	13	12	11	11	10	11	13	17	21	23	25	26	26	27	26	26	24	23	21	19	18	17	15	19	27
22	9	8	8	8	8	6	6	8	8	11	14	17	18	17	18	19	19	18	16	14	13	12	11	7	12	19
23	4	-1	-1	-1	2	3	2	11	14	18	19	21	21	21	21	21	21	19	18	17	15	13	13	13	13	21
24	13	-24	15	16	15	15	14	13	14	14	14	14	14	14	14	14	14	14	14	18	17	17	17	( )	13	18
25	13	13	14	14	14	14	(PF)	(PF)	4	21	22	23	23	23	24	23	23	22	19	18	17	15	14	13	18	24
26	13	12	12	11	11	9	8	11	14	17	20	22	23	23	22	21	22	21	18	18	17	15	15	14	16	23
27	14	15	15	15	14	14	14	14	15	16	15	16	15	16	17	17	15	14	13	12	12	12	13	13	14	17
28	12	12	11	11	11	11	11	11	13	15	16	17	18	19	19	19	19	18	17	16	16	18	18	18	15	19
29	17	15	12	11	9	8	6	7	6	2	5	6	5	9	9	7	7	8	8	6	5	4	3	2	7	17
30	2	3	3	3	3	2	2	3	3	5	7	9	10	11	11	12	12	10	9	7	6	6	5	4	6	12
AV	11	9	10	10	10	10	10	11	13	15	16	17	17	18	18	17	17	16	14	13	13	12	11	11	13	
PK	18	18	18	18	18	18	19	23	23	24	26	26	27	28	28	28	27	26	24	23	21	19	19	18		28
MN	2	-24	-1	-1	2	2	2	3	3	2	4	5	3	3	4	4	4	3	3	3	4	3	3	2		

MONTHLY MINIMUM = -24

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	17	16	15	14	13	13	14	16	19	22	24	26	26	27	27	26	26	24	23	21	19	18	16	16	20	27
2	10	10	11	11	10	9	9	11	12	14	17	17	10	15	17	16	16	15	13	12	12	12	12	11	13	17
3	3	3	3	4	4	3	3	3	3	4	4	6	3	3	5	3	4	3	3	3	4	4	3	1	4	6
4	14	14	14	13	13	12	13	16	21	24	26	27	27	28	28	27	27	26	24	23	22	19	19	19	21	28
5	14	14	14	13	13	12	13	16	21	24	26	27	27	28	28	27	27	26	24	23	22	19	19	19	21	28
6	4	4	4	9	11	10	7	7	10	11	11	10	8	8	9	9	8	8	9	9	9	9	8	6	8	11
7	19	19	18	18	18	18	18	19	23	22	23	26	25	26	24	24	24	18	13	13	13	13	12	19	19	26
8	19	18	18	18	18	18	19	23	22	23	26	25	26	24	24	24	22	18	13	13	13	13	12	12	19	26
9	11	11	12	12	12	13	13	14	16	17	18	20	21	21	18	12	11	12	12	11	11	11	11	12	14	21
10	17	16	15	14	13	13	14	16	19	22	24	26	26	27	27	26	26	24	23	21	19	18	16	16	20	27
11	15	16	16	16	14	14	16	16	16	19	18	12	15	20	19	18	18	19	15	12	9	9	9	9	15	20
12	9	9	9	9	9	9	8	7	7	7	7	7	7	6	6	6	7	7	6	6	6	6	6	6	7	9
13	6	6	4	4	4	3	4	6	8	11	13	13	13	11	9	7	6	6	5	5	6	4	4	4	7	13
14	4	4	4	3	4	4	5	4	6	6	6	6	6	4	4	5	4	4	4	4	4	3	3	4	4	6
15	4	4	3	3	3	3	3	5	6	7	8	8	8	7	5	4	4	4	4	3	3	3	3	3	5	8
16	4	4	5	4	3	3	3	5	9	14	16	17	18	18	19	19	18	18	16	15	15	14	15	14	12	19
17	14	14	13	13	13	12	12	12	14	16	18	19	20	21	20	19	18	18	17	16	15	15	14	14	16	21
18	12	13	14	15	14	13	12	12	13	16	16	17	17	18	18	18	18	18	16	16	14	13	12	12	15	18
19	12	12	11	11	10	9	9	11	13	18	20	19	19	17	15	13	11	11	11	11	11	11	10	9	13	20
20	16	14	13	11	11	11	11	14	18	21	24	26	26	28	28	27	26	24	22	20	18	18	17	16	19	28
21	16	14	13	11	11	11	11	14	18	21	24	26	26	28	28	27	26	24	22	20	18	18	17	16	19	28
22	9	8	9	9	9	8	9	8	9	11	15	18	19	18	18	19	19	18	16	15	14	13	12	11	13	19
23	12	12	12	12	12	12	12	13	14	18	19	21	21	21	21	21	21	19	18	18	16	15	14	14	16	21
24	13	-24	14	14	15	15	15	14	15	15	15	14	15	15	15	15	14	14	14	18	18	17	17	( )	14	18
25	14	14	16	15	14	16	(PF)	(PF)	5	21	22	23	23	23	24	23	23	21	19	19	17	16	16	14	18	24
26	13	12	12	11	10	10	9	12	14	18	21	23	23	23	23	22	22	21	18	18	18	16	16	15	17	23
27	16	15	16	16	15	15	14	15	16	16	14	16	14	16	17	17	15	13	13	12	12	13	13	13	15	17
28	12	12	11	11	11	11	11	12	13	15	16	17	18	19	20	19	19	18	17	16	17	18	18	17	15	20
29	16	14	13	11	9	8	7	7	7	6	4	6	4	9	10	7	7	8	8	6	4	4	2	2	7	16
30	2	2	3	3	2	2	2	3	3	5	7	9	11	11	11	12	11	10	9	6	6	6	5	4	6	12
AV	12	10	11	11	11	10	10	11	13	15	17	17	17	18	18	17	17	16	14	14	13	12	12	11	14	
PK	19	19	18	18	18	18	19	23	23	24	26	27	27	28	28	27	27	26	24	23	22	19	19	19		28
MN	2	-24	3	3	2	2	2	3	3	4	4	6	3	3	4	3	4	3	3	3	3	3	2	1		

MONTHLY MINIMUM = -24

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	61	61	11	50	-28	17	78	94	6	-94	-28	-39	-28	-67	-100	-111	-94	-83	-56	6	133	117	128	194	9	194
2	139	139	144	128	183	172	161	150	78	28	17	-28	6	78	-33	-33	-44	-22	50	61	133	106	28	50	70	183
3	-22	11	39	6	-39	-56	-67	-72	-72	-78	-78	-83	-61	-56	-72	-50	-72	-56	-11	-11	0	22	-17	-56	-40	39
4	144	167	172	139	189	100	72	128	56	-56	-72	-106	-156	-161	-150	-156	-106	-56	17	150	156	117	156	217	40	217
5	144	167	172	139	189	100	72	128	56	-56	-72	-106	-156	-161	-150	-156	-106	-56	17	150	156	117	156	217	40	217
6	-44	17	-11	44	-39	-22	-11	6	-33	-61	-44	-39	-56	-56	-39	-50	-56	-17	50	117	100	100	122	50	1	122
7	217	200	283	272	200	83	72	44	-94	-72	-61	-139	-144	-194	-100	-83	-128	-61	22	28	39	-11	-39	217	23	283
8	200	283	272	200	83	72	44	-94	-72	-61	-139	-144	-194	-100	-83	-128	-556	-61	22	28	39	-11	-39	-44	-20	283
9	-28	-11	-6	-6	-6	-11	-28	-44	-50	-50	-61	-89	-67	-67	-89	-117	-44	-17	-11	44	100	122	167	-44	-17	167
10	61	61	11	50	-28	17	78	94	6	-94	-28	-39	-28	-67	-100	-111	-94	-83	-56	6	133	117	128	194	9	194
11	67	78	133	61	78	128	44	-28	-50	-67	-61	-6	-50	-61	-89	-56	-78	-78	-67	-72	-61	-67	-50	-56	-17	133
12	-56	-61	-56	-50	-56	-56	-61	-22	-33	-28	-22	-39	-67	-78	-72	-61	-61	-72	-67	-50	-44	-44	-44	-28	-51	-22
13	-17	-11	-44	17	11	22	17	-22	-72	44	100	-44	-122	-106	-56	-39	-78	-78	-50	6	11	-61	-67	-61	-29	100
14	-44	-22	11	-50	-11	11	17	-22	-39	-50	-67	-67	-67	-33	-56	-39	-61	-50	-39	-28	-28	-44	-22	22	-32	22
15	0	-6	22	28	39	44	28	-22	-56	-67	-67	-72	-67	-67	-67	-61	-61	-61	-72	-44	-22	-44	-39	-50	-33	44
16	-17	22	11	28	-56	-67	-33	150	133	44	-50	-61	-67	-67	-83	-72	-61	-39	6	94	200	194	150	144	21	200
17	117	167	150	150	117	106	17	28	22	-22	-44	-72	-83	-67	-94	-89	-56	-17	17	61	50	39	72	178	31	178
18	128	89	150	56	-6	-39	-33	-39	-67	-94	-83	-100	-117	-133	-94	-128	-106	-67	33	156	189	156	133	94	3	189
19	150	61	72	156	144	144	167	111	22	50	44	-39	-61	-28	17	100	61	94	78	139	133	94	122	139	82	167
20	106	56	194	22	-83	78	28	89	56	0	-6	-39	-111	6	-33	-67	-67	-61	-28	-39	-22	39	117	122	15	194
21	106	56	194	22	-83	78	28	89	56	0	-6	-39	-111	6	-33	-67	-67	-61	-28	-39	-22	39	117	122	15	194
22	17	6	56	78	106	50	33	11	-28	-22	-50	-17	-61	-33	-61	-78	-78	-28	72	167	133	50	117	172	25	172
23	161	167	139	133	117	117	139	83	-39	-78	-106	-83	-83	-139	-72	-83	-61	6	117	78	156	200	117	-72	38	200
24	172	-267	78	67	67	78	94	111	133	128	111	106	94	89	83	83	89	89	83	44	172	194	178	( )	90	194
25	106	117	183	89	50	44	(PF)	(PF)	-56	-11	-39	-117	-78	-61	-83	-94	-89	-61	22	228	167	167	167	194	38	228
26	22	89	133	89	39	161	133	150	39	-17	22	22	-39	-28	-28	-22	-50	-56	-17	111	172	139	106	106	53	172
27	144	150	178	161	106	100	6	50	122	-22	-83	-44	-50	-39	-33	-56	-67	-111	-6	0	11	50	100	39	29	178
28	11	-11	-39	-28	-39	-44	-44	-28	-56	-211	-150	-56	-89	-94	-106	-94	-122	-89	-56	44	67	-50	-50	-44	-57	67
29	-50	-50	0	-50	-44	-56	-61	-50	-44	-50	-56	-50	-61	-61	-94	-83	-67	-50	-56	-44	-22	-22	-72	-44	-52	0
30	6	22	17	6	-39	-33	-6	-28	-28	-50	-61	-78	-72	-61	-56	-67	-50	-33	28	-56	-56	-61	-61	-39	-36	28
AV	67	58	89	67	39	45	34	36	-4	-37	-41	-57	-75	-64	-68	-69	-81	-44	1	44	72	59	63	67	8	
PK	217	283	283	272	200	172	167	150	133	128	111	106	94	89	83	100	89	94	117	228	200	200	178	217		283
MN	-56	-267	-56	-50	-83	-67	-67	-94	-94	-211	-150	-144	-194	-194	-150	-156	-556	-111	-72	-72	-61	-67	-72	-72		

MONTHLY MINIMUM = -556

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	92	92	91	91	91	93	95	94	85	64	51	46	84	78	54	44	45	45	64	74	76	79	76	81	74	95
3	90	93	93	87	78	77	86	87	85	81	81	74	94	98	86	96	86	94	94	94	94	87	100	100	89	100
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	31	33	34	35	36	38	36	27	18	16	15	14	14	13	13	13	14	16	21	23	24	24	26	30	24	38
6	96	97	98	40	42	49	84	86	72	65	81	77	93	95	91	94	92	95	87	86	86	85	95	96	83	98
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	1	33
8	35	35	35	35	36	37	31	31	30	24	22	20	21	21	22	26	86	90	90	90	90	90	93	0	45	93
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	4	94
10	37	44	46	50	59	62	52	36	24	16	15	15	14	13	13	12	12	14	18	23	25	32	33	33	29	62
11	70	70	73	71	82	83	63	61	61	45	51	81	64	45	42	47	44	44	59	93	97	97	96	96	68	97
12	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96
13	96	96	96	96	96	96	96	96	63	50	43	38	33	65	62	84	88	89	90	90	90	92	93	93	80	96
14	93	94	94	94	94	94	94	94	96	95	89	86	87	86	87	89	80	86	87	86	86	86	90	93	90	96
15	94	94	91	89	88	90	91	91	76	68	54	52	47	52	59	82	86	88	89	93	95	95	95	96	81	96
16	96	96	96	96	96	96	96	96	96	95	45	42	38	29	28	27	27	27	32	45	69	73	65	56	65	96
17	56	63	62	58	58	57	56	53	52	38	29	25	23	20	19	20	22	28	38	49	54	55	55	59	44	63
18	64	65	69	54	51	47	52	58	59	46	41	39	37	33	29	29	26	23	25	46	61	66	66	67	48	69
19	70	72	74	77	78	85	85	86	67	52	34	30	29	43	43	80	84	70	94	94	86	87	91	92	71	94
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	34	41	42	40	42	42	37	27	20	17	15	13	13	12	12	12	12	13	16	19	23	26	28	29	24	42
22	85	92	94	94	94	95	95	95	100	100	74	48	44	41	43	38	34	34	45	74	78	78	81	88	73	100
23	91	91	90	89	89	89	89	80	70	43	36	31	26	19	22	20	21	26	34	49	48	52	59	68	56	91
24	71	72	73	75	76	79	80	73	53	36	34	34	34	33	30	29	24	26	33	38	41	47	49	53	50	80
25	55	61	67	68	77	76	77	77	59	38	27	21	19	(RF)	(RF)	(RF)	(RF)	(RF)	26	29	37	46	46	58	51	77
26	59	62	67	63	67	68	68	59	45	35	22	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	29	33	35	37	38	38	( )	68
27	39	39	40	42	42	48	47	55	54	54	68	62	72	69	64	61	68	78	94	94	94	94	87	88	65	94
28	91	91	91	91	92	93	94	94	70	64	60	58	48	42	41	37	38	39	39	53	58	37	35	(RF)	63	94
29	39	38	60	76	87	93	94	94	95	94	97	96	97	86	63	75	77	61	62	72	87	95	96	97	80	97
30	100	99	97	97	96	97	98	99	99	82	61	44	34	(RF)	(RF)	(RF)	(RF)	(RF)	63	87	88	89	94	94	85	100
AV	59	61	62	60	61	63	63	62	55	47	41	39	40	40	38	41	43	44	48	54	57	58	59	63	53	
PK	100	99	98	97	96	97	98	99	100	100	97	96	97	98	96	96	96	96	96	96	97	97	100	100		100
MN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

MONTHLY MINIMUM = 0

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER A823
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	1	1	1	1	1	1	9	25	40	45	64	71	72	68	59	47	32	16	3	1	1	1	1	1	562	72
2	1	1	1	1	1	1	9	25	41	55	65	72	64	71	62	32	27	8	2	1	1	1	1	1	541	72
3	1	1	1	1	1	2	7	20	39	53	58	73	59	67	58	44	30	13	2	1	1	1	1	1	534	73
4	1	1	1	1	1	1	4	20	34	19	32	60	54	59	19	28	13	2	1	1	1	1	1	1	356	60
5	1	1	1	1	1	1	2	7	16	21	34	46	76	62	31	8	2	3	2	1	1	1	1	1	324	76
6	1	1	1	1	1	1	7	23	34	53	61	65	58	15	23	19	12	8	2	1	1	1	1	1	392	65
7	1	1	1	1	1	1	6	20	27	14	13	23	43	37	47	31	13	5	1	1	1	1	1	1	293	47
8	1	1	1	1	1	1	4	4	7	39	58	21	22	13	37	34	22	10	2	1	1	1	1	1	283	58
9	1	1	1	1	1	1	7	23	37	49	49	12	29	16	21	45	19	11	2	1	1	1	1	1	332	49
10	1	1	1	1	1	1	3	7	15	41	21	10	39	61	29	22	24	13	2	1	1	1	1	1	301	61
11	1	1	1	1	1	1	2	4	5	5	8	15	11	9	8	9	8	4	1	1	1	1	1	1	103	15
12	1	1	1	1	1	1	9	18	39	51	59	58	43	16	15	9	5	2	1	1	1	1	1	1	337	59
13	1	1	1	1	1	1	2	5	11	8	11	22	22	10	10	10	4	4	2	1	1	1	1	1	134	22
14	1	1	1	1	1	1	6	19	20	35	33	35	25	16	8	7	5	4	2	1	1	1	1	2	228	35
15	1	1	1	1	1	2	5	17	37	47	58	58	53	59	58	38	25	9	1	1	1	1	1	1	476	59
16	1	1	1	1	1	1	5	11	22	33	59	58	66	58	47	26	13	5	1	1	1	1	1	1	414	66
17	1	1	1	1	1	1	4	9	26	50	28	38	45	56	34	29	25	10	1	1	1	1	1	1	366	56
18	1	1	1	1	1	1	5	17	33	47	53	34	26	17	7	6	3	1	1	1	1	1	1	1	265	53
19	1	1	1	1	1	1	7	10	35	48	53	17	10	62	40	17	20	5	1	1	1	1	1	1	338	62
20	1	1	1	1	1	1	4	2	12	32	59	64	65	23	29	42	24	8	1	1	1	1	1	1	377	65
21	1	2	1	1	1	1	4	14	32	47	47	52	56	38	46	29	19	7	1	1	1	1	1	1	406	56
22	1	1	1	1	1	1	4	19	34	47	58	56	34	63	44	37	22	8	1	1	1	1	1	1	440	63
23	1	1	1	1	4	20	(PF)	(PF)	27	47	58	65	56	43	52	39	23	7	1	1	1	1	1	1	450	65
24	1	1	1	1	1	1	5	19	34	47	58	64	56	56	36	24	17	5	1	1	1	1	1	1	434	64
25	1	1	1	1	1	1	2	5	13	9	8	12	10	24	28	17	9	2	1	1	1	1	1	1	152	28
26	1	1	1	1	1	1	2	5	10	14	13	22	34	47	49	37	21	5	1	1	1	1	1	1	272	49
27	1	1	1	1	1	1	2	5	5	5	12	8	20	59	37	13	10	6	1	1	1	1	1	1	197	59
28	1	1	1	1	1	1	2	7	9	12	16	33	19	31	9	18	10	2	1	1	1	1	1	1	182	33
29	1	1	1	1	1	1	2	7	11	17	20	58	40	21	19	22	10	3	1	1	1	1	1	1	245	58
30	1	1	1	2	1	1	2	7	23	29	36	16	10	13	19	11	9	5	2	1	2	1	1	1	196	36
TL	34	35	35	36	39	56	131	373	728	1022	1202	1239	1216	1189	981	751	476	191	43	28	29	32	32	34	9931	
PK	1	2	1	2	4	20	9	25	41	55	65	73	76	71	62	47	32	16	3	1	2	1	1	2		76

(11/09/82-RPT)

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	797	797	797	797	798	798	798	796	796	798	796	796	795	795	794	794	794	794	795	795	796	797	797	798	796	798
2	798	797	798	797	798	798	798	796	797	797	796	796	796	795	795	795	794	794	794	795	795	796	797	797	796	798
3	797	796	796	796	796	796	796	797	796	795	795	794	794	793	793	792	792	792	792	793	793	794	794	794	794	797
4	795	794	794	794	794	794	795	796	795	794	794	793	793	793	792	792	792	792	794	795	795	796	796	796	794	796
5	797	796	796	796	796	796	796	797	796	796	797	796	795	794	793	794	795	796	796	797	796	797	796	797	796	797
6	797	797	796	797	796	797	796	798	797	796	795	795	794	794	794	795	795	795	795	796	796	796	796	797	796	798
7	797	796	796	797	796	796	796	795	795	797	797	797	796	796	795	795	795	795	795	796	795	795	795	796	796	797
8	796	796	796	795	795	796	796	795	796	796	795	795	794	794	794	793	793	793	793	794	795	795	795	795	795	796
9	795	795	795	794	795	795	794	793	794	794	793	794	794	794	792	791	791	791	791	791	791	791	791	792	793	795
10	792	791	791	790	790	790	790	790	789	789	789	789	788	788	787	786	786	786	788	788	789	789	789	789	789	792
11	788	788	788	788	788	788	788	789	789	789	789	789	789	789	789	789	789	789	789	789	790	789	789	789	789	790
12	789	789	789	789	789	790	790	789	789	788	788	787	786	787	786	787	788	788	788	789	789	789	790	789	788	790
13	790	789	789	789	788	788	788	787	786	787	787	787	786	787	787	787	788	788	789	790	791	791	791	791	788	791
14	792	792	792	792	792	793	793	794	795	795	795	795	795	795	795	795	795	795	795	796	796	796	796	795	794	796
15	795	795	794	794	794	794	794	794	794	794	793	793	793	792	792	792	792	792	792	792	792	792	792	792	793	795
16	792	792	792	792	793	793	793	793	794	794	793	793	793	792	792	792	793	793	793	793	793	793	793	793	793	794
17	793	793	793	793	793	794	794	795	795	795	796	795	795	795	795	795	795	795	795	795	796	796	796	796	795	796
18	796	796	796	796	796	796	796	797	796	796	796	796	795	794	794	794	794	795	795	795	795	795	795	795	795	797
19	795	795	795	795	795	795	795	796	796	795	795	795	796	795	794	794	794	794	794	794	794	794	794	795	795	796
20	795	795	795	795	795	795	796	796	796	797	796	796	796	795	795	794	794	794	795	795	795	796	796	796	795	797
21	797	797	797	797	797	798	798	798	798	798	798	797	797	796	796	796	796	796	796	796	796	797	797	797	797	798
22	797	797	797	797	797	797	797	797	798	798	798	798	797	797	796	794	792	791	791	791	791	791	790	792	795	798
23	797	797	797	797	797	798	(PF)	(PF)	783	798	798	798	798	797	797	796	792	793	794	795	795	796	796	797	796	798
24	797	797	797	797	797	797	797	798	797	797	797	795	794	794	794	794	794	795	795	795	795	796	796	795	796	798
25	795	795	794	794	795	794	794	795	796	796	795	795	795	794	794	793	793	793	793	794	793	793	793	793	794	796
26	792	792	791	791	790	790	790	790	789	789	788	788	787	786	785	783	783	783	783	782	782	782	781	781	787	792
27	781	781	781	781	781	782	782	781	780	782	783	782	782	781	781	782	782	781	781	781	782	782	782	782	782	783
28	781	781	781	781	781	781	782	783	784	785	785	785	785	785	786	785	786	786	785	785	785	785	785	785	784	786
29	785	785	785	785	786	786	786	787	787	785	784	784	784	784	784	784	784	784	785	785	785	786	786	786	785	787
30	786	786	786	786	786	785	786	785	785	785	785	785	785	785	785	784	783	783	783	783	784	784	784	785	785	786
AV	793	793	793	793	793	793	793	793	793	793	793	793	792	792	792	791	791	791	791	792	792	792	792	792	792	
PK	798	797	798	797	798	798	798	798	798	798	798	798	798	797	797	796	796	796	796	797	796	797	797	798		798
MN	781	781	781	781	781	781	782	781	780	782	783	782	782	781	781	782	782	781	781	781	782	782	781	781		

MONTHLY MINIMUM = 780

(11/09/82-RPI)

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1									(TR)			(TR)													( )	
2							(TR)	(TR)																	( )	
3																									( )	
4																				5			(TR)		5	5
5																		3							3	3
6																									( )	
7																									( )	
8								3	10	3	(TR)	(TR)	(TR)		(TR)	(TR)	3								18	10
9									(TR)	(TR)	(TR)	(TR)	84	(TR)	(TR)										84	84
10											5	5	(TR)	(TR)	(TR)	(TR)	(TR)					13		8	30	13
11																									( )	
12																									( )	
13											5		36	13		5					3	5			66	36
14															5	5				8	10			13	41	13
15																						(TR)			( )	
16																			(TR)	3				(TR)	3	3
17																		(TR)	(TR)	(TR)	3	(TR)			3	3
18															10	51	61	13							135	61
19												38													38	38
20							30				3														33	30
21																									( )	
22																									( )	
23																								(TR)	( )	
24	(TR)	(TR)	(TR)																						( )	
25																			3						3	3
26	3	10																							13	10
27						13	10		13	28	10	8	8								10		20	3	122	28
28												5	13		20		5						13	10	66	20
29					3																				3	3
30						10	3	3		10		23	23	5	5	3			(TR)						84	23
TL	3	10	( )	( )	3	23	43	5	23	41	23	79	163	18	41	63	69	15	3	15	25	18	33	33	747	
PK	3	10			3	13	30	3	13	28	10	38	84	13	20	51	61	13	3	8	10	13	20	13		84

11/09/82-RPI)

PRECIPITATION
CM*100

CB TRACT
MRI AD28
SEPT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																									
2																									
3																									
4																				8	5				13
5	(TR)	(TR)					(TR)	(TR)							(TR)	8	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	3	10
6				(TR)	(TR)	(TR)	(TR)	3																	3
7																									
8								10	3																13
9											63								(TR)	(TR)	(TR)	3			66
10											8	(TR)	3							18	20				48
11																									
12																									
13												3	10	33	(TR)	(TR)	10				(TR)	13			69
14							(TR)	(TR)							3	5	3			5	5			13	33
15							(TR)	(TR)	(TR)									(TR)	(TR)	(TR)	3	(TR)	(TR)	3	5
16																	(TR)	(TR)	(TR)	5	(TR)	(TR)	(TR)	3	8
17																		(TR)	(TR)	3	(TR)	(TR)	(TR)	3	5
18														(TR)	5	(TR)	46	30	(TR)						81
19							(TR)	(TR)					33	(TR)					3	3					38
20								10										(TR)	(TR)	(TR)	3				13
21																		(TR)	(TR)	3					3
22																									
23																			(TR)	3	(TR)	3	(TR)	3	8
24	(TR)	3				(TR)	(TR)																		3
25																		5	3				3	(TR)	10
26	5	8			(TR)														(TR)	(TR)					13
27	(TR)	3	(TR)	3	(TR)	3	28	10	18	30	15	10	8	3	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	3	5	30	3	170
28							15	(TR)	33	(TR)	3												25		76
29					3	(TR)	(TR)	3	(TR)	3	(TR)	(TR)	3	(TR)	(TR)	(TR)	(TR)	(TR)	3						13
30						8	(TR)	3	(TR)	(TR)	3	13	15	18	8	8	3	(TR)	(TR)	(TR)	(TR)	3			79
TL	5	13		3	3	10	43	38	53	33	91	25	71	53	15	20	61	36	8	46	38	25	58	28	777

```
STABILITY CLASS USING DT/DZ                                                                 CB-TRACT
DT 60-10M                                                                                   TRAILER AA23
WS 10M                                                                                      SEPT  1982
                                                                                            OCCIDENTAL OIL SHALE, INC.

                                                     HOUR (LOCAL STANDARD TIME)

DAY    1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  AVE


  1    E    E    E    E    D    E    F    F    E    B    D    D    D    D    B    B    B    C    D    E    F    F    F    F    D
  2    F    E    F    E    C  (   )   E    F    E    E    E    D    A    E    D    D    D    D    D    D    E    E    F    F    E
  3    F    F    F    F    F  (   )   E    F    E    D    D    B    B    B    B    B    B    D    E    E    F    F    F    F    E
  4    F    F    F    F    F    F    E    E    B    D    D    B    D    B    B    C    B    D    E    E    E    E    D    F    D
  5    D    D    E    E    E    E    E    D    D    D    D    D    B    D    D    C    B    D    E    E    E    F    F    F    D
  6    F    F    F    F    F    F  (   )   F    E    E    E    E    D    C    D    D    D    D    E    D    E    E    E    F    E
  7    F    E    E    E    E    E    F    F    F    D    D  (   )   D    E    D    D    D    D    D    E    F  (   )   F    E    E
  8    F    F    E    F    F    F    E    E    D    D    C    D    D    F    E    B    D    D    E    F    E    F    F    F    E
  9    F    F    F    F    F    F    F    F    E    A    B    E    F    E    E    D    D    E    E    F    E    E    F    F    E
 10    E    F    F    E    F    F    E    D    D    D    D    D    D    D    B    D    C    C    D    D    D    D    D    D    D
 11  (   )   D    D    D    D    D    D    E    D    D    E    D    D    C    D    D    D    D    D    D    D    D    D    D    D
 12    E    E    D    E    E    E    E    E    D    E    F    D    A    B    D    D    C    C    D    E    E    D  (   )   D    D
 13    D    E    E    D    E    E    E    E    D    D    D    D    D    D    D    D    D    D    D    D    D    D    E    E    D
 14    E    E    E    E    E    E    E    E    D    D    D    D    D    D    D    D    D    D    D    D    E  (   )   D    D    D
 15    E    E    E    E    D  (   )   D    F    F    E    D    D    D    D    D    D    D    D    E    F    F    F    E    E    E
 16    E    E    D    D    E    E    E    E    E    E    D    D    C    D    C    B    D    E    E    E    E    E    E    F    E
 17    F    F    F    E    E    D    D    D    D    B    C    B    B    B    B    B    B    D    E    F    F    F    F    F    D
 18    F    E    E    F    F    F    F    F    E    E    E    D  (   )   D    E    E    E    F    D    D    E    F    F    F    E
 19    F    F    F    F    F    F    F    F    F    E    E    D    E    E    D    D    D    E    E    E    F    F    E    E    E
 20    E    E    E    F    F    E    E    E    D    E    D    E    D    D    D    C    C    D    E    F    F    E    F    F    E
 21    F    F    F    F    F    F    F    F    D    C    A    C    C    B    D    C    D    E    E    E    F  (   )   F    D    E
 22    F    A    F    E    E    F    F    F    F    F    F    F    F    F    F    F    F    F    F    E    E    E    F  (   )   F
 23    F    F    F    F    E    E  (   )(   )   D    E    D    B    C    D    C    B    B    D    E    F    F    F  (   )   F    E
 24    E    F    F    F    E    F    F    F    E    E    E    E    D    D    D    E    D    D    E    F    F    F    F    F    E
 25    F    F    F    F    F    F    E    E    F    E    C    D    D    D    D    D    D    A    E    E    E    E    F  (   )   E
 26    E    E    D    D    D    D    D    D    D    B    C    D    C    C    D    D    D    D    D    E    E    D    D    D    D
 27    D    D    E    D    D    D    D    D    D    D    D    D    D    D    D    D    D    D    D    D    E    E    D    D    D
 28    E    E    E    E    D    D    D    D    D    C    C    C    D    D    D    D    D    D    E    E    E    E    E    D    D
 29    E    E    E    E    D    D    E    D    D    D    D    C    D    D    D    D    D    D    E    D    D    D    D    D    D
 30    D    E    E    E    D    D    E    D    D    D    D    D    D    D    D    D    D    E    E    E    E    E    F    E    E

AVE    E    E    E    E    E    E    E    E    E    D    D    D    D    D    D    D    D    D    E    E    E    E    E    E    E


  TOTAL OCCURRENCES:   A=   6     B= 34     C= 30     D=258     E=208     F=168     HOURS MISSING= 16



  (11/09/82-RPI)
```

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER A823 PERIOD(9/01/82 TO 9/30/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
CONCENTRATION MAX UG/M**3	2	1	1	2	2	2	2	2	2	2	2	2	2	1	1	2	1	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	17	9	17	24	32	36	63	70	90	102	62	32	20	38	26	33	12 :	683
TOTAL :	17	9	17	24	32	36	63	70	90	102	62	32	20	38	26	33	12	683
MEAN CONC.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

```
                 NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

        OXIDES OF NITROGEN (NOX)                                                          CATHEDRAL BLUFFS SHALE OIL

                                 TRAILER   AB23      PERIOD( 9/01/82 TO  9/30/82)

                                                                 WIND DIRECTION
                        N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
 CONCENTRATION
      MAX               3    1    1    3    5    3    3    3    5    3    3    3    3    3    3    3    3
    UG/M**3
                ......................................................................................................

   GT    65. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  60. -  65. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  55. -  60. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  50. -  55. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  45. -  50. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  40. -  45. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  35. -  40. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  30. -  35. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  25. -  30. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  20. -  25. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  15. -  20. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  10. -  15. :      0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

   5. -  10. :      0    0    0    0    1    0    0    0    1    0    0    0    0    0    0    0    0 :      2

   LT     5. :     17    9   17   24   31   36   63   70   89  102   62   32   20   38   26   33   12 :    681

    TOTAL    :     17    9   17   24   32   36   63   70   90  102   62   32   20   38   26   33   12      683
                ......................................................................................................

    MEAN            1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1       1
    CONC.

                0 = NO OBSERVATIONS
```

```
                 NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

       NITROGEN DIOXIDE (NO2)                                                      CATHEDRAL BLUFFS SHALE OIL

                          TRAILER   AB23     PERIOD( 9/01/82 TO  9/30/82)

                                                       WIND DIRECTION
                      N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
 CONCENTRATION
      MAX             1    1    1    1    3    3    3    3    3    3    3    3    3    3    3    3    1
    UG/M**3
                 ...........................................................................................

   GT    65. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  60. -  65. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  55. -  60. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  50. -  55. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  45. -  50. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  40. -  45. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  35. -  40. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  30. -  35. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  25. -  30. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  20. -  25. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  15. -  20. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

  10. -  15. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

   5. -  10. :        0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :      0

   LT     5. :       17    9   17   24   32   36   63   70   90  102   62   32   20   38   26   33   12 :    683

    TOTAL    :       17    9   17   24   32   36   63   70   90  102   62   32   20   38   26   33   12      683
                 ...........................................................................................

    MEAN              0    1    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0        0
    CONC.

                 0 = NO OBSERVATIONS
```

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER A823 PERIOD(9/01/82 TO 9/30/82)

	WIND DIRECTION																	
CONCENTRATION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	88	80	86	80	90	78	82	86	86	99	103	99	80	82	82	86	74	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
90. - 100. :	0	0	0	0	1	0	0	0	0	1	4	1	0	0	0	0	0 :	7
80. - 90. :	2	1	1	1	3	0	1	5	6	10	7	3	1	8	1	3	0 :	53
70. - 80. :	2	1	2	1	3	6	5	10	15	10	4	5	2	1	4	1	4 :	76
60. - 70. :	2	3	4	5	9	11	18	22	19	27	14	5	5	13	6	7	1 :	171
50. - 60. :	2	1	7	3	6	9	14	10	23	21	13	7	4	9	7	11	0 :	147
40. - 50. :	6	2	3	6	5	12	23	19	16	28	11	6	6	4	5	2	3 :	157
30. - 40. :	2	1	0	3	6	3	6	2	8	8	7	4	2	2	0	4	2 :	60
20. - 30. :	1	0	0	5	1	1	2	4	6	5	4	2	0	1	3	3	2 :	40
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	17	9	17	24	34	42	69	72	93	110	65	33	20	38	26	31	12	712
MEAN CONC.	54	58	59	48	57	55	54	57	56	56	59	56	55	59	55	53	51	56

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO)

CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(9/01/82 TO 9/30/82)

	WIND DIRECTION																	
CONCENTRATION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	114	114	114	114	114	114	114	114	114	114	114	114	0	114	114	114	114	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	3	1	2	3	5	8	7	6	3	9	9	5	0	1	3	6	1 :	72
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	14	8	15	21	29	34	62	65	89	101	53	27	20	37	23	27	11 :	636
TOTAL :	17	9	17	24	34	42	69	71	92	110	62	32	20	38	26	33	12	708
MEAN CONC.	20	12	13	14	16	21	11	9	3	9	16	17	0	3	13	20	9	11

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(9/01/82 TO 9/30/82)

CONCENTRATION MAX UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	5	2	5	5	5	2	5	5	5	5	5	5	5	5	5	5	2	
GT 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
12. - 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
9. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
6. - 7. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6. :	1	0	1	1	3	0	2	3	2	4	5	3	2	4	1	1	0 :	33
4. - 5. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	2	2	4	1	6	9	9	17	19	21	14	8	3	9	4	4	2 :	134
1. - 2. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1. :	14	7	12	22	23	27	53	50	66	77	44	21	15	25	21	28	10 :	515
TOTAL :	17	9	17	24	32	36	64	70	87	102	63	32	20	38	26	33	12	682
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S)　　　　　CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23　　PERIOD(9/01/82 TO 9/30/82)

CONCENTRATION UG/M**3		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM		TOTAL
MAX		4	2	2	2	2	2	6	5	6	5	5	4	4	2	4	6	2		
GT 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
12. - 13.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
11. - 12.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
10. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
9. - 10.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
8. - 9.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
7. - 8.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
6. - 7.	:	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	:	3
5. - 6.	:	0	0	0	0	0	0	0	1	1	2	4	0	0	0	0	1	0	:	9
4. - 5.	:	1	0	0	0	0	0	1	2	0	5	2	4	1	0	1	1	0	:	18
3. - 4.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
2. - 3.	:	3	3	2	1	4	1	1	2	8	7	4	1	0	1	0	4	2	:	44
1. - 2.	:	3	0	1	6	0	1	7	10	2	19	12	4	0	4	0	5	1	:	75
LT 1.	:	10	6	14	17	28	34	54	55	75	69	41	23	19	33	25	21	9	:	533
TOTAL	:	17	9	17	24	32	36	64	70	87	102	63	32	20	38	26	33	12		682
MEAN CONC.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		0

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(9/01/82 TO 9/30/82)

WIND SPEED MAX METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	3	1	4	1	4	2	6	7	7	7	5	5	4	6	6	4	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 8. :	0	0	0	0	0	0	3	11	13	21	6	1	0	3	2	0	0 :	60
3. - 5. :	2	0	1	0	2	0	14	20	40	37	27	6	7	15	11	8	0 :	190
1. - 3. :	10	3	4	10	24	34	44	33	25	30	19	9	7	15	8	17	0 :	292
LT 1. :	5	6	12	14	9	9	8	9	15	22	13	17	6	5	5	8	0 :	163
TOTAL :	17	9	17	24	35	43	69	73	93	110	65	33	20	38	26	33	0	705
PERCENT	2.	1.	2.	3.	5.	6.	10.	10.	13.	16.	9.	5.	3.	5.	4.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(9/01/82 TO 9/30/82)

WIND SPEED METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX		3	1	5	2	6	4	9	10	9	10	8	6	6	9	8	5	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	1	10	10	12	5	0	0	2	2	0	0 :	42
5. -	8. :	0	0	1	0	1	0	9	19	28	37	16	5	4	8	6	2	0 :	136
3. -	5. :	3	0	3	0	3	21	26	22	21	31	19	7	5	14	9	11	0 :	195
1. -	3. :	8	3	6	6	13	26	26	15	13	18	15	10	11	13	6	13	0 :	202
LT	1. :	4	2	13	6	17	9	2	3	8	8	15	6	8	11	10	7	0 :	129
TOTAL	:	15	5	23	12	34	56	64	69	80	106	70	28	28	48	33	33	0	704
PERCENT		2.	1.	3.	2.	5.	8.	9.	10.	11.	15.	10.	4.	4.	7.	5.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(9/01/82 TO 9/30/82)

WIND SPEED	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX METERS/SEC	4	3	6	3	4	7	11	11	12	11	10	7	6	11	9	6	0	
GT 11. :	0	0	0	0	0	0	1	1	3	3	0	0	0	2	0	0	0 :	10
8. - 11. :	0	0	0	0	0	0	2	19	12	23	11	0	0	0	3	0	0 :	70
5. - 8. :	0	0	1	0	0	1	8	20	28	41	25	9	3	13	10	4	0 :	163
3. - 5. :	8	2	4	1	9	23	21	29	20	26	14	4	3	13	8	13	0 :	198
1. - 3. :	14	4	6	11	13	11	19	14	21	16	10	14	12	17	8	17	0 :	207
LT 1. :	3	7	0	3	1	4	2	2	7	9	4	2	10	2	7	4	0 :	67
TOTAL :	25	13	11	15	23	39	53	85	91	118	64	29	28	47	36	38	0	715
PERCENT	3.	2.	2.	2.	3.	5.	7.	12.	13.	17.	9.	4.	4.	7.	5.	5.	0.	100.

0 = NO OBSERVATIONS

```
FIVE MAXIMUM SLIDING AVERAGE                                    C-B TRACT
UG/M**3                                                         SITE AB23
                                                                SEPT 1982
                                                                CATHEDRAL BLUFFS SHALE OIL CO.

     COMPONENT      AVG. TIME       RANK       DAY      HOUR(BEG)      VALUE
       SO2             3 HR
                                     1          1          16            5.2
                                     2          2          12            5.2
                                     3          2          17            5.2
                                     4          4          11            5.2
                                     5          4          14            5.2
       SO2            24 HR
                                     1          2           7            3.9
                                     2          1           7            3.4
                                     3          3          18            3.2
                                     4          5           1            2.3
                                     5          6           1            2.0
       CO              1 HR
                                     1          1           8          100.0
                                     2          1          19          100.0
                                     3          1          20          100.0
                                     4          1          21          100.0
                                     5          2          21          100.0
       CO              8 HR
                                     1         21          15          100.0
                                     2         27          15          100.0
                                     3          5          15          100.0
                                     4          9          14          100.0
                                     5         26          17          100.0
       O3              1 HR
                                     1          4          18          104.0
                                     2          4          14          100.1
                                     3          4          16          100.1
                                     4          4          17          100.1
                                     5          4          19          100.1
       PART           24 HR
                                     1          4           1           41.1
                                     2         24           1           21.5
                                     3         16           1           19.3
                                     4          8           1           17.7
                                     5         20           1           17.2
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

SEPTEMBER 1982

GASEOUS PARAMETERS	
NOX:	97 %
NO:	97
NO2:	97
O3:	100
CO:	99
SO2:	98
H2S:	98

PARTICULATES: 100 %

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	100 %
30 M:	100
60 M:	100
WIND DIRECTION	
10 M:	100
30 M:	100
60 M:	100
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	100
30 M:	100
60 M:	100
TEMPERATURE	
10 M:	100
30 M:	100
60 M:	100
DELTA TEMPERATURE:	100
RELATIVE HUMIDITY:	98
SOLAR RADIATION:	100
BAROMETRIC PRESSURE:	100
PRECIPITATION:	100

OCTOBER

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-441
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-442
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-443
Ozone (O_3) at Station AB23 . . . . II-444
Carbon Monoxide (CO) at Station AB23 . . . . II-445
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-446
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-447
Particulates Daily Average at Stations AB23 . . . . II-448

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-449
Wind Speed at Station AA23 - 30 Meter Level II-450
Wind Speed at Station AA23 - 60 Meter Level II-451
Wind Direction at Station AA23 - 10 Meter Level II-452
Wind Direction at Station AA23 - 30 Meter Level II-453
Wind Direction at Station AA23 - 60 Meter Level II-454
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-455
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-456
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-457
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-458
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-459
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-460
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-461
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-462
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-463
Delta Temperature (60m - 10m) at Station AA23 . . . . II-464
Relative Humidity at Station AB23 - 3 Meter Level II-465
Solar Radiation at Station AB23 . . . . II-466
Barometric Pressure at Station AB23 . . . . II-467
Precipitation at Station AB23 . . . . II-468
Precipitation at Station AD28 . . . . II-469
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-470

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-471
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-472
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-473
Ozone (O_3) at Station AB23. . . . . II-474
Carbon Monoxide (CO) at Station AB23. . . . . II-475
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-476
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-477

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-478
Station AA23 - 30 Meter Level II-479
Station AA23 - 60 Meter Level II-480

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-481

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-482

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1	0	1
2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
9	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	1
10	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
14	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
22	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
23	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
25	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
26	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	1	0	0	0	0	0	0	0	0	1	0	1
27	0	1	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	5	4	2	2	1	1	0	0	1	1	5
28	0	0	0	0	0	0	0	0	0	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	1	0	0	0	0	0	0	0	0	0	1	0	1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
PK	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	5	4	2	2	1	1	0	0	2		5

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	4	2	4	4	2	2	4	6	4	4	4	2	4	2	2	2	2	2	2	0	2	2	2	2	3	6
2	2	2	0	2	0	0	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2	0	0	0	1	2
3	2	2	2	2	2	2	2	4	4	2	2	2	2	2	2	2	2	2	2	4	4	4	4	2	2	4
4	4	2	2	2	2	2	4	2	4	2	2	0	2	2	2	2	2	2	2	2	0	2	2	2	2	4
5	2	2	0	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2	2	0	0	2	0	0	1	2
6	2	0	2	0	0	0	2	2	2	2	2	2	2	2	2	0	0	2	2	0	2	0	2	2	1	2
7	4	2	4	2	2	2	2	2	2	2	0	2	0	2	2	2	2	2	2	2	4	4	2	2	2	4
8	2	2	0	2	0	0	0	2	2	2	4	4	2	0	2	2	2	0	0	0	0	0	0	0	1	4
9	2	2	0	0	2	2	0	0	2	2	2	2	2	4	2	4	4	4	2	2	2	2	2	2	2	4
10	2	2	2	2	2	0	2	2	4	4	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	4
11	4	2	2	0	2	2	2	0	2	2	2	2	2	2	2	2	2	2	0	2	2	4	2	2	2	4
12	2	4	2	4	4	4	2	2	4	4	8	4	4	4	2	2	2	2	2	2	2	4	4	4	3	8
13	2	2	2	4	2	2	2	2	2	4	4	4	2	2	2	2	2	2	0	2	2	2	2	2	2	4
14	2	2	2	2	2	0	2	4	4	4	4	4	4	2	2	4	2	2	2	2	2	2	2	2	2	4
15	4	2	2	4	4	4	4	4	4	4	2	4	2	2	2	2	2	2	2	2	2	2	0	2	3	4
16	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	0	0	2	0	2	2	2	4
17	2	2	2	2	0	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	4	2	2	2	2	0	2	2	4	2	0	2	2	0	2	2	2	0	0	2	2	2	2	0	2	4
19	2	0	2	0	2	2	2	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
20	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	4	2	4
21	4	2	2	2	2	2	2	2	4	4	4	4	4	4	2	2	2	4	2	2	2	2	4	2	3	4
22	2	2	2	2	2	2	2	2	6	4	4	4	2	4	2	2	2	4	2	4	2	2	4	2	3	6
23	2	4	2	2	4	2	2	2	2	4	4	4	2	2	2	2	2	2	2	2	0	2	2	2	2	4
24	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	4	2	2	4	2	4	2	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	4	4	3	4
26	4	4	2	4	4	4	2	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	6	4	4	4	4	2	2	2	2	2	3	6
27	2	0	2	2	2	2	2	0	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	8	6	4	4	4	4	4	4	4	3	8
28	4	4	2	2	2	2	2	2	4	(CA)	(CA)	2	2	0	0	0	0	0	0	0	0	0	0	0	1	4
29	2	2	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	4	4	2	0	0	0	0	2	4	2	0	1	4
30	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	1	2
31	2	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	1	2
AV	2	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
PK	4	4	4	4	4	4	4	6	6	4	8	4	4	4	6	8	6	4	4	4	4	4	4	4		8

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	4	0	4	4	2	0	4	6	4	4	4	0	2	2	2	2	2	0	2	0	0	2	2	0	2	6
2	2	2	0	2	0	0	2	2	2	0	2	2	2	2	2	2	2	0	0	2	2	0	0	0	1	2
3	2	2	2	2	2	2	2	4	4	2	2	2	2	2	2	2	2	2	2	4	4	4	4	0	2	4
4	4	2	2	2	0	2	4	2	4	2	2	0	2	2	2	2	2	2	2	2	0	2	2	0	2	4
5	2	2	0	2	2	2	2	2	2	2	2	2	0	2	0	0	2	2	2	0	0	2	0	0	1	2
6	2	0	2	0	0	0	2	2	2	2	2	2	2	2	0	0	0	2	2	0	2	0	2	0	1	2
7	4	2	4	2	2	2	2	2	2	2	0	2	0	2	2	2	2	2	2	2	4	4	2	0	2	4
8	2	2	0	2	0	0	0	2	0	2	4	4	2	0	2	2	2	0	0	0	0	0	0	0	1	4
9	2	2	0	0	2	2	0	0	2	2	2	2	0	4	2	4	2	4	2	2	2	2	2	0	2	4
10	2	2	2	2	2	0	2	2	2	4	2	4	4	4	2	2	2	2	2	2	2	2	2	0	2	4
11	4	2	2	0	2	2	2	0	2	2	2	2	2	2	2	2	2	2	0	2	2	4	2	2	2	4
12	2	4	2	4	4	4	2	2	4	4	6	4	4	4	2	2	2	2	2	2	2	4	4	4	3	6
13	2	2	2	4	2	2	2	2	2	4	4	4	2	2	2	2	2	2	0	2	2	2	2	0	2	4
14	2	2	2	2	2	0	2	4	4	2	4	4	4	2	2	4	2	2	2	2	2	2	2	0	2	4
15	4	2	2	4	4	4	4	4	2	4	2	4	2	2	2	2	2	2	2	2	2	2	0	0	2	4
16	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	0	0	2	0	2	0	2	4
17	2	2	2	2	0	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2
18	4	2	2	2	2	0	2	2	4	2	0	2	2	0	2	2	2	0	0	2	2	2	2	0	2	4
19	2	0	2	0	2	2	2	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	4
20	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	4	0	2	2	2	2	2	4
21	4	2	2	2	2	2	2	2	4	4	4	4	4	4	2	2	2	4	2	0	2	2	4	0	2	4
22	2	0	2	2	2	2	0	2	6	4	4	4	2	4	2	2	2	4	2	4	2	2	4	0	2	6
23	2	4	2	2	4	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	0	2	2	0	2	4
24	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2
25	4	2	2	2	2	4	2	4	4	4	4	2	4	4	4	4	2	2	2	2	2	2	4	2	3	4
26	6	4	2	4	6	4	2	4	4	(CA)	(CA)	(CA)	(CA)	(CA)	4	4	4	4	4	2	2	2	2	0	3	6
27	2	0	2	2	2	2	2	0	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	2	2	4	4	2	1	4
28	4	4	2	2	2	2	2	2	4	(CA)	(CA)	2	2	0	0	0	0	0	0	0	0	0	0	0	1	4
29	2	2	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	2	4	2	0	0	0	0	2	4	2	0	1	4
30	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	1	2
31	2	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	1	2
AV	3	2	2	2	2	1	2	2	3	2	2	2	2	2	2	2	2	2	1	1	2	2	2	0	2	
PK	6	4	4	4	6	4	4	6	6	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4		6

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	51	59	67	69	65	65	57	49	53	69	73	76	76	76	73	74	67	61	57	43	53	49	41	51	61	76
2	51	57	59	55	51	47	45	55	67	69	67	69	71	69	69	69	65	61	49	49	49	49	57	59	58	71
3	65	69	69	67	67	63	63	55	65	76	78	78	78	80	84	88	90	84	84	78	78	69	78	78	74	90
4	69	76	78	71	71	69	73	67	73	86	84	86	88	88	90	88	92	86	82	84	82	76	74	76	80	92
5	69	65	65	53	51	55	57	69	71	71	74	80	80	76	82	82	78	71	65	61	63	57	45	45	66	82
6	61	59	57	59	61	55	57	53	51	63	74	76	74	71	73	76	73	69	69	69	63	63	63	65	65	76
7	63	67	65	63	69	73	69	74	80	84	82	80	80	78	80	88	98	100	92	90	82	74	71	69	78	100
8	65	69	67	63	63	63	59	57	59	61	63	63	65	63	65	65	67	65	55	47	51	47	51	51	60	69
9	43	47	51	59	57	53	55	57	61	63	63	67	69	69	67	67	65	61	61	61	51	51	43	37	57	69
10	39	41	41	41	39	37	37	35	43	55	61	65	73	73	76	78	73	69	65	63	63	63	61	55	56	78
11	51	49	53	55	55	55	47	47	55	65	69	73	76	76	76	74	74	71	69	65	63	67	57	49	62	76
12	49	51	59	51	51	59	57	49	39	59	65	69	76	80	86	86	82	80	69	69	67	63	65	59	64	86
13	59	59	45	45	47	31	37	39	41	57	63	65	69	73	76	71	73	74	74	69	67	63	63	61	59	76
14	61	55	59	61	61	61	57	51	51	59	69	76	76	73	69	69	67	63	55	49	47	43	47	49	59	76
15	39	41	41	39	39	35	33	35	39	45	57	67	71	74	78	80	76	71	65	65	67	63	67	67	56	80
16	61	67	67	65	63	61	65	55	55	65	76	80	82	84	84	80	78	71	65	65	69	71	71	71	69	84
17	67	69	69	69	67	63	67	63	74	80	80	80	80	86	88	88	88	86	82	80	80	80	78	76	77	88
18	69	73	73	71	74	74	71	63	71	78	80	84	86	86	86	84	82	80	78	76	69	67	73	76	76	86
19	74	74	69	63	63	59	57	57	63	67	69	69	71	73	73	73	69	65	59	49	49	57	53	53	63	74
20	55	55	51	57	57	59	61	59	53	59	69	69	73	78	78	78	73	71	67	67	67	63	69	69	65	78
21	71	73	73	71	73	69	69	67	61	67	76	76	78	80	78	80	76	71	67	65	65	65	69	63	71	80
22	69	71	69	71	69	69	69	63	61	65	71	76	76	76	74	76	73	63	55	59	61	57	55	59	67	76
23	61	65	65	69	69	67	63	61	61	61	67	69	69	69	69	69	71	69	69	69	69	71	76	74	67	76
24	74	71	65	69	71	73	69	67	61	61	67	63	61	65	67	67	63	61	59	65	71	71	69	67	66	74
25	67	65	61	61	61	59	59	53	53	61	69	69	69	69	69	67	63	61	61	61	61	61	61	57	62	69
26	49	49	49	49	47	45	45	45	47	49	49	51	51	53	57	49	53	51	47	47	47	53	65	57	50	65
27	61	49	49	57	59	61	67	69	67	65	65	71	71	69	71	69	65	63	53	59	57	51	47	47	61	71
28	51	49	49	55	57	61	61	61	53	61	67	71	74	74	73	69	67	63	63	63	61	63	63	63	62	74
29	61	59	65	65	63	65	63	65	67	73	76	74	74	74	73	76	76	73	69	67	63	59	67	69	68	76
30	67	69	69	69	67	65	65	67	65	65	69	69	69	69	67	65	63	59	55	59	59	57	53	49	63	69
31	49	51	49	53	49	49	41	45	51	57	57	59	61	61	59	59	59	51	47	45	41	37	41	49	51	61
AV	59	60	60	60	60	59	58	56	58	65	69	72	73	74	74	74	73	69	65	63	62	61	61	60	64	
PK	74	76	78	71	74	74	73	74	80	86	84	86	88	88	90	88	98	100	92	90	82	80	78	78		100

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
2	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
3	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	100	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	100
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	100
10	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	100
11	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	5	100
12	0	0	0	0	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	100
13	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	14	100
17	100	100	100	100	100	100	100	100	100	100	0	100	0	0	100	0	0	0	0	0	0	0	0	0	57	100
18	0	0	0	0	0	100	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	100
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	5	100
20	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	100	0	14	100
21	0	0	0	0	100	100	100	200	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	200
22	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	100
23	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
24	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	0	0	0	0	0	14	100
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	100	100	100	0	0	0	0	0	100	0	0	0	(CA)	0	0	0	0	0	0	0	0	0	0	20	100
29	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
30	0	0	0	0	0	0	100	300	300	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	300
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	22	30	30	15	15	19	22	37	41	26	0	11	11	4	7	4	7	0	0	0	0	0	4	0	13	
PK	100	100	100	100	100	100	100	300	300	200	0	100	100	100	100	100	100	0	0	0	0	0	100	0		300

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	3	0	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	0	0	0	0	0	0	0	0	3
5	0	0	0	0	0	0	0	0	(OE)	(OE)	(OE)	(OE)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3	0	0	0	0	0	0	0	3
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	0	0	0	0	3	3		3

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																									
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	3	3	1	0	0	0	1	1	3	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	3
2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	(OE)	(OE)	(OE)	(OE)	3	3	1	1	1	1	0	0	1	1	0	0	1	3
6	1	1	1	1	1	1	1	3	3	3	3	4	4	4	4	3	3	1	1	1	1	1	3	3	2	4
7	3	1	1	1	0	0	0	1	1	3	4	6	3	3	4	4	3	1	1	1	0	0	0	1	2	6
8	1	0	1	0	1	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1
9	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
10	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1
11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	1	1	0	0	0	0	0	0	0	1	3
14	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	4	3	3	3	3	3	3	1	1	1	0	0	0	0	0	0	1	4
19	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1
20	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
21	0	0	0	0	0	0	0	3	4	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	4
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	1	0	0	0	0	0	0	0	0	0	0	1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
PK	3	3	3	1	1	1	1	3	4	3	4	6	4	4	4	4	3	1	1	1	1	1	3	3		6

PARTICULATE DATA
UG/M3

C-B TRACT
OCT 1982
OCCIDENTAL OIL SHALE, INC.

	STATION				
DAY	AB20	AB23	AB26	AD42	AD56
2	( )	12.8	( )	( )	( )
6	( )	3.9	( )	( )	( )
10	( )	0.7	( )	( )	( )
14	( )	9.4	( )	( )	( )
18	( )	26.9	( )	( )	( )
22	( )	20.9	( )	( )	( )
26	( )	8.4	( )	( )	( )
30	( )	4.6	( )	( )	( )
AVE	( )	10.9	( )	( )	( )
GM	( )	7.19	( )	( )	( )
PEAK	( )	26.9	( )	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	3	3	3	4	1	3	2	1	0	4	4	4	5	5	4	6	4	4	1	1	2	1	2	1	3	6
2	2	2	0	1	1	1	1	2	2	1	1	1	2	1	1	1	1	0	2	2	1	1	0	0	1	2
3	1	2	2	2	2	4	2	2	1	3	6	6	6	6	5	5	6	4	0	2	2	2	1	1	3	6
4	1	(CM)	0	2	2	0	2	1	3	5	5	6	7	6	6	6	4	2	3	0	1	3	1	1	3	7
5	2	2	3	2	3	3	3	2	2	3	3	5	3	2	1	0	2	1	1	(CM)	0	(CM)	(CM)	(CM)	2	5
6	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	0	0	1	3	3	3	3	4	4	4	3	2	2	2	2	2	2	2	4
7	2	1	2	1	2	0	1	1	4	6	6	9	9	7	6	6	5	4	3	2	4	5	4	4	4	9
8	5	5	3	3	3	3	2	2	2	2	2	4	4	3	2	1	2	2	1	1	1	0	1	1	2	5
9	1	2	3	3	2	2	2	3	2	2	3	3	4	5	3	3	2	2	2	3	0	0	1	1	2	5
10	1	1	0	1	1	0	0	(CM)	1	2	2	3	4	4	4	4	4	4	2	2	1	1	0	0	2	4
11	0	1	0	0	0	(CM)	1	1	0	1	2	2	2	2	2	3	3	3	2	2	1	1	0	1	1	3
12	2	0	1	1	1	0	0	0	0	1	1	3	3	4	4	4	3	2	0	0	1	0	1	0	2	4
13	(CM)	1	2	1	1	1	1	0	0	0	1	2	3	3	2	3	2	3	1	2	1	0	(CM)	1	1	3
14	1	0	0	(CM)	0	0	1	(CM)	1	1	1	1	3	2	2	3	2	2	1	1	2	2	0	(CM)	1	3
15	(CM)	1	1	0	0	1	1	0	1	1	1	2	3	4	4	4	3	2	2	2	2	1	2	2	2	4
16	2	1	1	2	2	0	0	1	1	1	2	2	2	2	2	4	4	2	2	2	1	1	0	1	2	4
17	1	2	2	1	2	1	2	2	2	6	5	6	6	6	7	7	6	4	3	2	2	3	3	3	3	7
18	3	1	0	1	0	1	1	0	3	5	6	7	7	8	7	7	6	5	3	2	4	5	5	5	4	8
19	4	3	2	1	0	1	1	1	1	1	1	2	2	1	1	1	2	1	0	1	1	0	1	0	1	4
20	0	1	1	0	1	0	1	1	0	1	1	2	3	3	2	2	1	1	0	2	2	1	1	1	1	3
21	0	1	0	0	1	0	0	0	0	1	2	2	4	4	4	4	3	2	2	0	0	1	0	1	2	4
22	0	0	0	0	1	1	1	2	2	2	1	2	2	1	0	1	1	1	2	1	0	1	1	2	1	2
23	0	0	0	1	1	1	1	0	0	1	1	2	2	1	1	2	3	1	1	1	1	1	1	0	1	3
24	1	1	1	2	1	1	1	2	0	1	4	4	4	4	3	3	3	2	2	3	4	3	4	3	2	4
25	5	5	4	2	1	3	4	3	2	1	4	4	4	4	4	4	4	2	1	2	0	1	1	0	3	5
26	3	2	3	4	3	2	2	1	4	8	7	7	6	4	5	7	7	4	3	4	2	4	3	2	4	8
27	2	0	1	1	0	0	4	3	3	2	3	3	3	3	2	1	1	1	1	2	2	1	1	1	2	4
28	2	1	1	1	1	0	0	0	0	(CM)	1	1	3	2	2	3	3	4	4	2	2	2	2	2	2	4
29	2	3	3	3	2	3	3	2	1	3	4	4	5	4	4	4	4	4	2	1	3	2	1	1	3	5
30	1	3	3	4	3	2	2	3	3	2	2	3	4	3	2	2	1	2	2	3	2	1	1	1	2	4
31	2	1	1	2	2	0	1	(CM)	2	4	4	4	4	5	1	2	3	0	(CM)	1	0	0	1	2	2	5
AV	2	2	2	2	1	1	1	1	2	2	3	4	4	4	3	3	3	2	2	2	2	2	2	2	2	
PK	5	5	4	4	3	4	4	3	4	8	7	9	9	8	7	7	7	5	4	4	4	5	5	5		9

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	5	4	4	5	2	4	4	1	0	4	6	6	7	6	6	8	5	4	2	2	3	1	2	2	4	8
2	2	2	1	0	1	1	1	3	3	2	2	1	2	1	1	1	1	0	3	3	2	0	0	1	2	3
3	2	3	3	3	3	5	4	3	2	4	8	8	8	8	7	7	8	6	1	2	2	2	1	1	4	8
4	1	1	1	0	1	1	3	1	4	6	7	8	9	8	8	8	5	3	4	0	2	4	2	1	4	9
5	3	4	5	3	4	4	4	3	3	4	4	7	4	3	1	1	3	2	1	1	2	2	1	1	3	7
6	0	2	0	0	0	0	1	1	(CM)	2	4	4	4	4	4	5	5	4	2	2	4	4	2	2	3	5
7	2	2	3	2	2	1	(CM)	2	6	8	8	13	12	10	8	9	8	5	6	4	5	8	4	5	6	13
8	8	7	4	4	4	4	3	3	3	3	3	5	6	4	3	1	3	3	0	0	1	1	2	2	3	8
9	1	2	4	4	3	3	2	4	3	3	3	4	5	7	4	4	3	3	3	4	1	(CM)	1	1	3	7
10	0	0	0	1	1	1	1	0	1	2	3	4	4	4	5	5	5	5	3	3	3	3	1	0	2	5
11	0	(CM)	0	0	(CM)	(CM)	0	1	1	1	2	2	3	2	3	4	3	4	4	3	3	2	0	1	2	4
12	1	0	1	1	0	0	1	0	1	1	2	4	4	4	6	5	4	3	1	1	1	0	0	1	2	6
13	1	0	3	1	2	1	1	0	0	0	1	3	3	4	3	3	2	4	2	2	3	0	(CM)	1	2	4
14	1	1	(CM)	0	0	0	0	0	1	2	1	2	4	3	3	3	3	3	3	1	1	2	0	0	2	4
15	0	1	1	1	0	0	0	1	1	1	1	2	4	4	4	4	4	4	3	3	2	2	3	2	2	4
16	2	0	2	4	4	1	1	1	1	0	2	3	3	2	3	5	6	4	2	4	3	1	0	1	2	6
17	0	2	2	1	1	(CM)	2	2	3	8	7	8	8	8	9	9	8	6	4	4	3	5	5	5	5	9
18	4	1	2	1	1	1	1	0	4	7	8	9	9	11	10	9	8	8	4	4	5	7	8	6	5	11
19	5	4	3	2	(CM)	1	1	0	1	1	1	2	2	2	2	2	2	2	1	1	1	(CM)	1	1	2	5
20	0	0	0	0	1	1	1	0	0	1	2	2	3	3	3	3	2	2	1	2	4	1	0	1	2	4
21	0	1	0	0	0	0	0	0	(CM)	1	3	3	5	5	6	5	4	2	2	1	0	1	0	1	2	6
22	0	1	(CM)	0	1	1	1	2	2	2	1	3	2	1	0	2	1	1	3	1	(CM)	1	1	3	1	3
23	0	1	0	2	3	1	0	0	1	1	2	2	3	2	1	2	4	2	1	1	1	2	4	(CM)	2	4
24	1	2	1	3	1	1	0	1	1	2	5	6	5	6	4	4	4	3	3	4	5	4	5	4	3	6
25	7	7	5	3	2	4	5	4	2	2	5	4	5	6	6	6	6	4	1	3	1	1	1	1	4	7
26	5	3	4	6	4	4	4	2	7	10	9	9	8	6	8	9	10	5	4	6	3	4	0	3	6	10
27	4	0	1	2	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	2	2	1	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	( )	4
28	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	0	(CM)	1	1	4	2	3	4	4	6	6	4	4	3	3	3	3	6
29	4	4	4	4	3	4	4	3	1	4	6	6	7	6	6	6	6	5	4	2	4	3	2	3	4	7
30	2	5	4	6	4	3	3	4	4	3	4	4	5	4	2	2	2	2	3	4	2	2	1	2	3	6
31	2	1	2	3	2	1	1	0	3	5	6	6	6	7	2	2	4	0	0	1	0	1	2	3	3	7
AV	2	2	2	2	2	2	2	2	2	3	4	5	5	5	4	5	4	4	3	2	2	2	2	2	3	
PK	8	7	5	6	4	5	5	4	7	10	9	13	12	11	10	9	10	8	6	6	5	8	8	6		13

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	5	5	5	3	4	4	2	0	5	7	6	7	7	7	9	6	5	4	3	4	2	3	2	5	9
2	2	3	1	4	2	1	1	4	3	2	2	1	2	2	1	1	1	1	3	4	2	1	0	1	2	4
3	2	2	3	3	3	5	4	4	2	4	9	9	9	9	8	8	9	8	1	1	3	1	1	2	5	9
4	0	1	0	(CM)	1	4	4	1	4	7	8	9	10	9	9	8	6	4	4	1	1	4	3	2	4	10
5	4	4	7	4	5	5	5	4	3	4	4	7	5	4	2	1	4	3	1	1	2	2	(CM)	1	4	7
6	2	2	2	0	1	3	2	2	1	2	4	5	4	4	5	6	6	4	3	3	4	4	3	4	3	6
7	2	3	3	2	2	2	2	4	7	9	9	14	14	12	10	10	9	6	8	5	7	8	5	5	7	14
8	8	8	4	4	5	5	4	3	4	4	4	6	6	4	4	1	4	3	1	0	2	2	2	2	4	8
9	2	4	5	4	4	3	3	4	3	3	4	4	6	7	4	4	4	4	3	4	1	1	1	1	4	7
10	1	1	1	2	2	1	2	2	1	2	3	4	5	5	5	5	6	6	4	4	3	3	2	0	3	6
11	1	0	2	3	4	1	1	0	1	1	3	2	3	3	3	4	4	5	5	5	4	3	1	1	3	5
12	1	1	1	1	1	0	3	1	1	1	2	4	4	5	6	5	4	4	2	1	1	4	4	1	3	6
13	1	1	3	1	3	1	2	0	1	0	1	4	4	4	3	4	3	4	3	3	3	2	2	1	2	4
14	2	1	1	1	0	2	1	2	1	2	1	2	4	3	3	4	4	4	4	1	1	2	1	0	2	4
15	1	0	0	3	1	2	0	1	2	1	1	2	4	5	5	5	4	4	3	3	3	4	3	3	3	5
16	3	1	2	4	5	3	2	0	1	(CM)	2	4	3	2	3	6	7	5	3	4	3	1	1	1	3	7
17	0	1	1	1	1	2	1	2	4	9	8	9	9	10	10	11	9	7	5	5	4	6	8	7	6	11
18	5	2	4	2	1	1	3	2	6	8	9	10	10	12	11	10	10	9	6	5	6	8	8	7	7	12
19	6	5	3	2	1	1	1	1	1	2	1	2	3	2	2	2	2	2	2	1	1	3	1	1	2	6
20	1	1	1	1	1	2	1	1	1	2	2	3	4	4	4	3	2	3	2	2	3	3	1	2	2	4
21	1	1	1	1	1	2	0	2	0	1	3	3	5	6	7	6	4	3	1	1	1	2	2	1	2	7
22	1	3	1	1	2	2	1	2	2	2	1	3	3	1	(CM)	2	2	1	3	2	1	3	1	2	2	3
23	0	1	2	2	2	1	1	1	2	2	2	2	3	2	1	3	5	3	2	2	1	3	5	1	2	5
24	2	4	3	3	2	1	1	2	2	2	5	6	6	6	4	5	4	3	4	5	6	5	6	5	4	6
25	9	8	6	4	3	4	6	6	4	2	6	5	6	7	7	7	6	4	2	4	2	1	2	1	5	9
26	6	4	5	7	5	4	4	3	8	12	10	11	9	7	8	10	11	6	5	7	4	6	7	4	7	12
27	4	4	7	3	2	2	5	5	4	3	4	4	5	4	4	3	3	2	3	4	4	3	2	2	4	7
28	4	2	2	2	2	1	1	1	0	1	1	2	4	3	3	4	5	8	8	6	6	5	4	4	3	8
29	4	4	6	5	4	4	4	4	2	4	7	7	8	8	8	7	8	6	5	2	4	4	3	4	5	8
30	3	6	5	7	5	3	4	5	4	4	4	5	6	4	3	3	2	3	4	5	3	3	2	3	4	7
31	3	2	3	4	3	2	2	1	4	6	7	7	7	8	2	3	4	1	1	1	1	2	3	4	3	8
AV	3	3	3	3	3	3	3	2	3	4	4	5	6	5	5	5	5	4	3	3	3	3	3	2	4	
PK	9	8	7	7	5	5	6	6	8	12	10	14	14	12	11	11	11	9	8	7	7	8	8	7		14

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	198	202	188	167	121	148	190	228	25	227	234	235	219	219	238	250	286	299	275	243	296	239	217	215	226
2	219	213	161	184	127	188	158	163	161	142	238	262	264	298	33	355	7	294	225	224	201	210	109	129	198
3	163	158	122	126	127	139	122	118	92	229	198	216	205	217	202	217	219	207	264	137	171	79	126	198	169
4	98	(CM)	279	99	107	99	168	79	139	209	221	207	212	209	204	202	202	194	184	148	122	143	196	177	171
5	181	209	201	284	255	262	258	271	308	313	312	325	295	275	287	266	311	268	137	(CM)	90	(CM)	(CM)	(CM)	271
6	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	112	19	212	201	205	219	206	227	221	219	190	157	117	115	105	102	107	169
7	77	114	87	32	49	128	20	188	185	175	194	197	201	204	223	242	225	217	220	211	317	320	353	327	200
8	331	342	341	313	322	329	306	308	319	342	333	322	307	24	40	90	297	231	125	207	224	270	78	205	319
9	224	254	323	290	285	267	263	291	297	320	357	2	16	24	26	343	341	16	39	35	331	243	283	235	318
10	225	232	146	194	149	169	191	(CM)	338	315	318	347	24	32	22	27	34	35	53	99	132	156	27	235	57
11	180	223	157	307	129	(CM)	237	81	90	41	333	309	18	10	31	14	357	14	44	78	121	99	215	221	48
12	217	194	160	224	215	115	125	225	297	289	346	337	8	11	25	27	18	20	144	189	208	186	168	346	230
13	(CM)	242	276	242	222	35	121	192	82	24	355	333	341	347	2	3	356	15	53	111	135	320	(CM)	270	353
14	200	192	32	(CM)	248	214	225	(CM)	291	310	327	316	303	293	317	331	338	320	297	235	226	215	107	(CM)	280
15	(CM)	239	128	196	157	215	254	8	57	27	356	256	209	210	204	204	223	237	201	208	198	191	157	173	205
16	199	139	198	198	197	315	233	49	88	33	0	338	320	350	345	322	309	306	211	202	189	158	238	153	253
17	100	120	127	106	104	51	91	71	183	195	199	209	209	215	221	225	222	209	196	199	223	191	194	187	177
18	176	135	159	357	77	142	143	54	215	213	219	220	220	218	215	215	221	217	242	276	339	329	323	349	218
19	356	343	278	241	209	209	328	219	304	313	330	319	302	327	314	291	327	4	127	211	213	66	163	207	288
20	197	217	211	241	223	176	69	232	326	5	353	314	321	302	313	308	343	29	95	156	172	207	208	221	256
21	173	194	195	117	207	333	322	119	354	12	329	319	303	320	313	310	309	307	221	176	300	211	233	210	275
22	171	167	199	215	188	206	110	104	70	51	242	237	230	240	81	327	9	291	235	219	217	220	104	194	199
23	256	212	0	101	133	182	199	262	71	31	4	339	307	301	317	239	214	233	221	95	157	194	189	73	223
24	148	150	104	202	76	205	225	212	86	159	211	215	210	207	187	192	185	209	209	216	238	252	191	175	191
25	200	197	182	105	110	170	153	155	133	180	225	220	214	215	216	210	223	214	146	156	90	98	132	104	170
26	169	122	143	179	150	134	128	118	191	184	188	201	194	192	191	184	176	158	163	191	183	219	182	266	175
27	270	172	93	61	66	287	351	344	3	6	314	309	287	293	295	281	292	308	308	308	308	308	309	309	316
28	308	308	309	308	307	307	309	302	0	(CM)	233	288	278	273	196	192	194	173	181	163	136	129	125	116	251
29	112	125	158	160	139	130	118	104	132	196	212	212	206	209	211	207	203	192	179	84	134	122	166	168	162
30	163	178	162	171	154	120	139	149	82	96	189	202	199	198	177	186	321	181	166	197	186	189	137	132	166
31	167	163	202	187	159	139	217	(CM)	211	207	203	227	223	224	334	348	334	9	(CM)	55	51	262	292	294	223
PV	187	189	170	191	156	174	183	153	51	289	272	270	260	263	274	265	284	262	186	177	183	197	171	198	222

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	194	201	188	168	129	131	170	204	20	227	235	238	221	222	240	251	290	302	287	271	303	267	232	231	230
2	239	225	217	142	110	165	162	161	160	141	239	249	261	300	37	349	6	287	238	249	217	231	55	119	210
3	148	150	130	129	126	133	123	128	98	228	200	217	207	217	204	218	220	210	257	134	176	65	109	210	169
4	99	210	210	71	122	198	182	98	141	211	225	209	213	209	205	204	203	198	193	197	110	129	196	212	183
5	187	215	209	297	272	278	273	278	311	314	312	325	296	273	283	266	311	274	141	123	122	122	122	123	263
6	122	122	124	121	117	122	125	185	(CM)	216	199	205	219	207	229	223	218	193	163	112	118	115	135	150	161
7	98	122	96	32	55	177	(CM)	179	186	176	196	200	202	205	225	244	227	221	224	229	314	319	353	335	205
8	331	342	354	348	314	326	326	326	320	341	332	321	306	25	40	90	299	235	59	207	255	283	61	214	328
9	240	271	325	289	289	275	269	293	294	320	355	4	17	24	25	344	342	17	40	35	357	(CM)	304	278	327
10	315	276	59	150	130	156	145	145	335	312	316	347	25	33	21	28	35	36	50	86	114	131	106	275	50
11	148	(CM)	351	14	(CM)	(CM)	301	90	101	48	331	312	22	8	33	15	356	14	45	71	109	102	122	245	35
12	236	207	163	253	253	169	100	176	279	286	347	337	9	11	25	28	17	24	84	106	174	153	172	346	10
13	43	292	288	254	213	21	108	158	101	32	356	331	342	346	4	3	355	15	46	94	112	7	(CM)	305	9
14	232	217	(CM)	53	53	233	270	101	285	306	327	311	301	295	315	330	336	324	323	298	261	233	180	90	297
15	0	242	123	189	126	170	301	357	73	35	353	249	211	213	205	205	224	243	204	209	205	202	161	175	205
16	219	163	169	174	176	183	189	12	111	32	359	334	318	351	343	320	307	306	225	212	205	163	301	151	239
17	112	119	128	125	118	(CM)	104	106	188	197	201	212	212	216	224	226	224	213	202	205	223	195	194	184	183
18	186	166	199	325	29	125	184	228	219	217	223	225	226	220	217	217	223	221	243	285	339	330	325	349	233
19	355	343	287	267	(CM)	170	23	199	308	318	335	318	304	325	309	285	325	6	79	189	241	(CM)	131	165	306
20	143	211	228	315	250	227	83	201	315	16	356	314	321	301	313	308	344	29	79	135	150	162	204	224	274
21	180	193	201	85	174	249	338	84	(CM)	9	325	315	303	318	311	309	308	314	250	159	325	219	186	217	272
22	221	199	(CM)	199	191	206	129	127	98	58	238	242	233	241	71	319	9	321	264	249	(CM)	239	105	180	210
23	315	217	270	98	125	160	212	270	90	37	4	336	302	298	310	240	218	253	219	79	124	193	182	(CM)	236
24	208	198	169	199	109	170	243	204	107	161	214	220	215	210	188	193	186	214	215	220	240	253	195	179	198
25	203	199	184	110	120	167	151	154	134	178	228	222	217	216	217	213	223	217	161	158	161	115	169	151	179
26	167	136	156	178	143	127	128	131	195	185	190	203	194	194	193	185	177	159	168	192	186	214	180	263	176
27	277	174	90	50	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	292	274	282	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	( )
28	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	19	(CM)	237	281	275	268	197	194	196	176	184	176	155	159	145	133	194
29	117	132	166	164	155	134	133	118	161	198	213	214	210	211	215	212	206	194	188	93	137	141	176	178	170
30	160	184	167	173	159	139	154	154	84	97	193	202	201	201	182	188	321	187	173	201	194	195	156	142	173
31	171	175	213	192	159	169	209	145	210	209	205	228	226	227	325	346	332	4	212	90	45	270	294	298	219
PV	188	195	179	153	143	173	166	156	125	264	270	267	259	261	273	265	284	266	193	169	178	188	163	199	223

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	197	207	195	177	146	140	174	205	260	228	236	238	224	223	239	250	290	299	290	291	302	278	250	247	234
2	251	240	241	22	68	162	156	163	164	147	246	250	259	299	36	4	13	291	250	262	239	255	63	90	242
3	145	158	152	148	134	141	138	145	110	227	201	218	207	217	206	218	220	212	245	132	197	38	62	224	177
4	166	215	258	(CM)	187	196	184	169	150	212	225	209	213	210	206	204	204	201	200	222	118	134	201	215	197
5	196	220	216	299	285	287	282	282	307	320	318	330	304	281	294	304	319	295	163	123	146	199	(CM)	150	273
6	121	150	163	251	102	222	179	199	188	218	201	206	218	208	230	224	217	196	173	127	136	136	169	176	185
7	125	133	119	38	76	198	201	182	187	180	197	199	203	206	224	243	228	222	227	236	317	325	357	337	205
8	339	348	349	326	335	338	322	318	329	346	336	327	313	27	40	86	306	258	17	156	282	299	44	228	335
9	263	285	328	297	301	292	288	305	303	327	359	10	22	29	29	348	347	24	42	39	14	128	337	328	341
10	24	6	41	125	120	143	138	143	335	319	323	353	31	38	25	33	39	40	50	75	104	123	109	39	54
11	115	63	11	39	19	110	268	45	126	59	334	320	29	11	35	21	1	21	49	66	95	94	65	268	40
12	261	259	213	232	298	262	173	165	284	290	352	343	15	19	31	33	23	31	77	99	148	76	185	333	337
13	354	32	318	305	197	337	111	124	142	27	0	340	348	351	9	8	359	20	43	79	98	74	150	130	31
14	35	225	275	159	99	125	335	117	276	310	328	313	308	298	324	333	343	333	335	338	305	261	236	128	312
15	97	221	338	163	85	135	185	349	45	46	358	252	213	215	208	207	225	243	214	215	209	213	176	176	201
16	236	199	169	174	177	184	196	275	187	(CM)	359	339	322	353	348	325	312	312	259	231	220	190	254	173	244
17	201	139	158	184	191	208	151	169	191	198	201	213	212	216	223	226	224	215	209	211	219	200	199	191	198
18	197	199	204	291	344	151	205	227	222	218	225	226	225	220	217	217	223	222	248	289	341	336	332	352	239
19	358	349	313	295	33	153	29	145	303	327	346	325	310	325	312	289	330	9	68	156	285	246	123	135	333
20	122	97	130	320	278	239	96	158	121	39	5	322	328	305	320	314	346	33	71	122	139	159	186	222	61
21	175	201	216	39	180	231	225	118	281	2	329	319	309	321	317	314	315	324	289	168	344	146	186	207	270
22	212	323	57	135	150	197	180	174	137	75	229	244	233	245	(CM)	323	11	2	279	281	64	217	103	169	200
23	315	209	227	117	122	150	185	54	114	70	11	343	309	307	314	235	218	261	224	63	135	191	184	198	199
24	235	208	205	202	145	175	133	172	139	161	213	221	217	210	189	194	188	224	222	224	240	253	199	183	199
25	205	201	188	120	133	162	149	153	138	180	228	222	218	216	219	214	224	220	181	171	199	196	186	184	189
26	169	155	166	180	148	140	143	149	197	187	192	203	196	197	194	186	178	163	173	195	192	220	196	254	182
27	280	103	163	47	52	51	3	346	5	6	326	312	304	297	295	279	286	316	322	278	299	316	347	353	330
28	354	354	353	354	352	354	353	345	103	161	235	283	282	273	200	195	197	179	188	185	170	176	166	151	230
29	135	151	173	174	169	147	154	143	184	201	212	214	211	212	216	214	208	197	196	109	149	161	189	193	180
30	193	190	176	176	168	158	170	162	100	111	197	203	203	202	184	188	320	197	181	203	200	199	174	157	181
31	179	182	220	195	168	214	208	173	210	209	207	227	225	227	321	347	335	335	208	180	280	273	291	300	230
PV	192	194	205	184	132	177	177	164	179	225	276	272	264	265	274	269	287	277	219	176	199	199	177	197	230

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	198	202	188	167	121	148	190	228	25	227	234	235	219	219	238	250	286	299	275	243	296	239	217	215	228	2.2
2	219	213	161	184	127	188	158	163	161	142	238	262	264	298	33	355	7	294	225	224	201	210	109	129	203	0.7
3	163	158	122	126	127	139	122	118	92	229	198	216	205	217	202	217	219	207	264	137	171	79	126	198	188	2.4
4	98	***	279	99	107	99	168	79	139	209	221	207	212	209	204	202	202	194	184	148	122	143	196	177	192	2.4
5	181	209	201	284	255	262	258	271	308	313	312	325	295	275	287	266	311	268	137	***	90	***	***	***	277	1.6
6	***	***	***	***	***	***	***	112	19	212	201	205	219	206	227	221	219	190	157	117	115	105	102	107	188	1.6
7	77	114	87	32	49	128	20	188	185	175	194	197	201	204	223	242	225	217	220	211	317	320	353	327	215	2.1
8	331	342	341	313	322	329	306	308	319	342	333	322	307	24	40	90	297	231	125	207	224	270	78	205	325	1.7
9	224	254	323	290	285	267	263	291	297	320	357	2	16	24	26	343	341	16	39	35	331	243	283	235	338	1.5
10	225	232	146	194	149	169	191	***	338	315	318	347	24	32	22	27	34	35	53	99	132	156	27	235	28	1.0
11	180	223	157	307	129	***	237	81	90	41	333	309	18	10	31	14	357	14	44	78	121	99	215	221	21	0.7
12	217	194	160	224	215	115	125	225	297	289	346	337	8	11	25	27	18	20	144	189	208	186	168	346	4	0.6
13	***	242	276	242	222	35	121	192	82	24	355	333	341	347	2	3	356	15	53	111	135	320	***	270	354	0.7
14	200	192	32	***	248	214	225	***	291	310	327	316	303	293	317	331	338	320	297	235	226	215	107	***	295	0.9
15	***	239	128	196	157	215	254	8	57	27	356	256	209	210	204	204	223	237	201	208	198	191	157	173	207	1.3
16	199	139	198	198	197	315	233	49	88	33	0	338	320	350	345	322	309	306	211	202	189	158	238	153	287	0.5
17	100	120	127	106	104	51	91	71	183	195	199	209	209	215	221	225	222	209	196	199	223	191	194	187	198	2.7
18	176	135	159	357	77	142	143	54	215	213	219	220	220	218	215	215	221	217	242	276	339	329	323	349	233	2.5
19	356	343	278	241	209	209	328	219	304	313	330	319	302	327	314	291	327	4	127	211	213	66	163	207	310	0.8
20	197	217	211	241	223	176	69	232	326	5	353	314	321	302	313	308	343	29	95	156	172	207	208	221	281	0.5
21	173	194	195	117	207	333	322	119	354	12	329	319	303	320	313	310	309	307	221	176	300	211	233	210	299	1.0
22	171	167	199	215	188	206	110	104	70	51	242	237	230	240	81	327	9	291	235	219	217	220	104	194	200	0.4
23	256	212	0	101	133	182	199	262	71	31	4	339	307	301	317	239	214	233	221	95	157	194	189	73	231	0.3
24	148	150	104	202	76	205	225	212	86	159	211	215	210	207	187	192	185	209	209	216	238	252	191	175	202	2.0
25	200	197	182	105	110	170	153	155	133	180	225	220	214	215	216	210	223	214	146	156	90	98	132	104	191	2.3
26	169	122	143	179	150	134	128	118	191	184	188	201	194	192	191	184	176	158	163	191	183	219	182	266	182	3.7
27	270	172	93	61	66	287	351	344	3	6	314	309	287	293	295	281	292	308	308	308	308	308	309	309	318	1.4
28	308	308	309	308	307	307	309	302	0	***	233	288	278	273	196	192	194	173	181	163	136	129	125	116	202	0.8
29	112	125	158	160	139	130	118	104	132	196	212	212	206	209	211	207	203	192	179	84	134	122	166	168	175	2.3
30	163	178	162	171	154	120	139	149	82	96	189	202	199	198	177	186	321	181	166	197	186	189	137	132	168	1.8
31	167	163	202	187	159	139	217	***	211	207	203	227	223	224	334	348	334	9	***	55	51	262	292	294	224	1.2
VD	197	192	171	184	160	167	164	147	161	211	231	244	240	238	236	241	250	234	193	183	196	207	181	213	218	
VV	0.7	0.7	0.7	0.7	0.6	0.6	0.4	0.3	0.3	1.0	1.6	2.1	2.2	1.8	1.4	1.7	1.5	0.8	1.0	0.9	0.7	0.5	0.5	0.5		0.9

TOTAL NUMBER OF OBSERVATIONS = 721

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	194	201	188	168	129	131	170	204	20	227	235	238	221	222	240	251	290	302	287	271	303	267	232	231	228	2.9
2	239	225	217	142	110	165	162	161	160	141	239	249	261	300	37	349	6	287	238	249	217	231	55	119	213	0.8
3	148	150	130	129	126	133	123	128	98	228	200	217	207	217	204	218	220	210	257	134	176	65	109	210	190	3.2
4	99	210	210	71	122	198	182	98	141	211	225	209	213	209	205	204	203	198	193	197	110	129	196	212	198	3.2
5	187	215	209	297	272	278	273	278	311	314	312	325	296	273	283	266	311	274	141	123	122	122	122	123	275	1.7
6	122	122	124	121	117	122	125	185	***	216	199	205	219	207	229	223	218	193	163	112	118	115	135	150	184	1.9
7	98	122	96	32	55	177	***	179	186	176	196	200	202	205	225	244	227	221	224	229	314	319	353	335	217	3.4
8	331	342	354	348	314	326	326	326	320	341	332	321	306	25	40	90	299	235	59	207	255	283	61	214	330	2.5
9	240	271	325	289	289	275	269	293	294	320	355	4	17	24	25	344	342	17	40	35	357	***	304	278	341	2.2
10	315	276	59	150	130	156	145	145	335	312	316	347	25	33	21	28	35	36	50	86	114	131	106	275	36	1.5
11	148	***	351	14	***	***	301	90	101	48	331	312	22	8	33	15	356	14	45	71	109	102	122	245	29	1.3
12	236	207	163	253	253	169	100	176	279	286	347	337	9	11	25	28	17	24	84	106	174	153	172	346	12	1.1
13	43	292	288	254	213	21	108	158	101	32	356	331	342	346	4	3	355	15	46	94	112	7	***	305	1	1.0
14	232	217	***	53	53	233	270	101	285	306	327	311	301	295	315	330	336	324	323	298	261	233	180	90	305	1.2
15	0	242	123	189	126	170	301	357	73	35	353	249	211	213	205	205	224	243	204	209	205	202	161	175	210	1.5
16	219	163	169	174	176	183	189	12	111	32	359	334	318	351	343	320	307	306	225	212	205	163	301	151	266	0.8
17	112	119	128	125	118	***	104	106	188	197	201	212	212	216	224	226	224	213	202	205	223	195	194	184	204	4.3
18	186	166	199	325	29	125	184	228	219	217	223	225	226	220	217	217	223	221	243	285	339	330	325	349	237	3.7
19	355	343	287	267	***	170	23	199	308	318	335	318	304	325	309	285	325	6	79	189	241	***	131	165	320	1.1
20	143	211	228	315	250	227	83	201	315	16	356	314	321	301	313	308	344	29	79	135	150	162	204	224	313	0.4
21	180	193	201	85	174	249	338	84	***	9	325	315	303	318	311	309	308	314	250	159	325	219	186	217	302	1.4
22	221	199	***	199	191	206	129	127	98	58	238	242	233	241	71	319	9	321	264	249	***	239	105	180	219	0.5
23	315	217	270	98	125	160	212	270	90	37	4	336	302	298	310	240	218	253	219	79	124	193	182	***	223	0.5
24	208	198	169	199	109	170	243	204	107	161	214	220	215	210	188	193	186	214	215	220	240	253	195	179	206	2.8
25	203	199	184	110	120	167	151	154	134	178	228	222	217	216	217	213	223	217	161	158	161	115	169	151	193	3.2
26	167	136	156	178	143	127	128	131	195	185	190	203	194	194	193	185	177	159	168	192	186	214	180	263	182	5.1
27	277	174	90	50	***	***	***	***	***	***	***	***	***	***	292	274	282	***	***	***	***	***	***	***	****	****
28	***	***	***	***	***	***	***	***	19	***	237	281	275	268	197	194	196	176	184	176	155	159	145	133	186	2.5
29	117	132	166	164	155	134	133	118	161	198	213	214	210	211	215	212	206	194	188	93	137	141	176	178	181	3.4
30	180	184	167	173	159	139	154	154	84	97	193	202	201	201	182	188	321	187	173	201	194	195	156	142	174	2.7
31	171	175	213	192	159	169	209	145	210	209	205	228	226	227	325	346	332	4	212	90	45	270	294	298	226	1.7
VD	201	192	182	174	154	166	158	154	178	209	229	242	239	235	237	242	248	236	201	179	180	199	182	207	216	
VV	0.9	1.1	1.1	0.9	0.9	0.9	0.9	0.7	0.8	1.6	2.3	3.0	3.1	2.6	2.0	2.3	2.2	1.3	1.2	1.1	0.9	0.8	0.6	0.8		1.2

TOTAL NUMBER OF OBSERVATIONS = 703

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	197	207	195	177	146	140	174	205	260	228	236	238	224	223	239	250	290	299	290	291	302	278	250	247	233	3.6
2	251	240	241	22	68	162	156	163	164	147	246	250	259	299	36	4	13	291	250	262	239	255	63	90	238	0.6
3	145	158	152	148	134	141	138	145	110	227	201	218	207	217	206	218	220	212	245	132	197	38	62	224	196	3.8
4	166	215	258	***	187	196	184	169	150	212	225	209	213	210	206	204	204	201	200	222	118	134	201	215	202	4.2
5	196	220	216	299	285	287	282	282	307	320	318	330	304	281	294	304	319	295	163	123	146	199	***	150	281	2.4
6	121	150	163	251	102	222	179	199	188	218	201	206	218	208	230	224	217	196	173	127	136	136	169	176	191	2.7
7	125	133	119	38	76	198	201	182	187	180	197	199	203	206	224	243	228	222	227	236	317	325	357	337	216	4.1
8	339	348	349	326	335	338	322	318	329	346	336	327	313	27	40	86	306	258	17	156	282	299	44	228	335	3.2
9	263	285	328	297	301	292	288	305	303	327	359	10	22	29	29	348	347	24	42	39	14	128	337	328	346	2.6
10	24	6	41	125	120	143	138	143	335	319	323	353	31	38	25	33	39	40	50	75	104	123	109	39	46	2.1
11	115	63	11	39	19	110	268	45	126	59	334	320	29	11	35	21	1	21	49	66	95	94	65	268	36	1.9
12	261	259	213	232	298	262	173	165	284	290	352	343	15	19	31	33	23	31	77	99	148	76	185	333	23	1.1
13	354	32	318	305	197	337	111	124	142	27	0	340	348	351	9	8	359	20	43	79	98	74	150	130	21	1.2
14	35	225	275	159	99	125	335	117	276	310	328	313	308	298	324	333	343	333	335	338	305	261	236	128	320	1.2
15	97	221	338	163	85	135	185	349	45	46	358	252	213	215	208	207	225	243	214	215	209	213	176	176	208	1.8
16	236	199	169	174	177	184	196	275	187	***	359	339	322	353	348	325	312	312	259	231	220	190	254	173	267	1.2
17	201	139	158	184	191	208	151	169	191	198	201	213	212	216	223	226	224	215	209	211	219	200	199	191	209	5.3
18	197	199	204	291	344	151	205	227	222	218	225	226	225	220	217	217	223	222	248	289	341	336	332	352	238	4.5
19	358	349	313	295	33	153	29	145	303	327	346	325	310	325	312	289	330	9	68	156	285	246	123	135	333	1.2
20	122	97	130	320	278	239	96	158	121	39	5	322	328	305	320	314	346	33	71	122	139	159	186	222	353	0.4
21	175	201	216	39	180	231	225	118	281	2	329	319	309	321	317	314	315	324	289	168	344	146	186	207	306	1.4
22	212	323	57	135	150	197	180	174	137	75	229	244	233	245	***	323	11	2	279	281	64	217	103	169	225	0.5
23	315	209	227	117	122	150	185	54	114	70	11	343	309	307	314	235	218	261	224	63	135	191	184	198	210	0.7
24	235	208	205	202	145	175	133	172	139	161	213	221	217	210	189	194	188	224	222	224	240	253	199	183	207	3.5
25	205	201	188	120	133	162	149	153	138	180	228	222	218	216	219	214	224	220	181	171	199	196	186	184	195	4.0
26	169	155	166	180	148	140	143	149	197	187	192	203	196	197	194	186	178	163	173	195	192	220	196	254	185	6.4
27	280	103	163	47	52	51	3	346	5	6	326	312	304	297	295	279	286	316	322	278	299	316	347	353	326	2.1
28	354	354	353	354	352	354	353	345	103	161	235	283	282	273	200	195	197	179	188	185	170	176	166	151	197	1.7
29	135	151	173	174	169	147	154	143	184	201	212	214	211	212	216	214	208	197	196	109	149	161	189	193	188	1.6
30	193	190	176	176	168	158	170	162	100	111	197	203	203	202	184	188	320	197	181	203	200	199	174	157	182	3.5
31	179	182	220	195	168	214	208	173	210	209	207	227	225	227	321	347	335	335	208	180	280	273	291	300	227	2.3
VD	208	201	196	178	149	177	176	170	185	207	233	245	242	237	238	240	249	242	214	197	202	209	196	212	220	
VV	0.9	1.1	1.5	0.8	0.7	1.2	1.2	1.1	1.0	1.7	2.5	3.1	3.2	2.9	2.3	2.6	2.4	1.5	1.3	1.1	0.9	1.1	1.3	1.0		1.4

TOTAL NUMBER OF OBSERVATIONS = 740

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	7	4	3	5	7	6	17	21	29	16	13	12	12	17	12	10	9	8	9	9	8	8	7	5	11	29
2	5	6	16	11	15	6	17	10	15	40	25	43	32	38	30	29	19	9	6	6	6	8	25	15	18	43
3	11	8	6	9	4	5	9	11	23	20	11	11	13	13	16	12	11	9	16	16	17	16	9	10	12	23
4	16	(CM)	39	19	5	30	14	14	14	15	15	14	13	13	13	13	13	11	8	15	12	7	18	7	15	39
5	6	4	4	12	7	7	6	10	14	13	12	9	10	8	13	14	7	9	7	(CM)	0	(CM)	(CM)	(CM)	9	14
6	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	18	22	20	14	15	13	20	16	13	9	8	8	11	6	10	19	16	14	22
7	14	23	15	27	24	28	34	45	17	13	14	11	11	12	11	9	10	10	6	14	10	8	9	9	16	45
8	9	8	9	9	8	10	8	10	10	8	12	11	12	12	11	16	13	8	10	6	17	28	11	9	11	28
9	5	5	9	6	5	5	6	7	11	16	14	13	13	10	10	10	12	9	10	7	13	11	10	9	9	16
10	21	18	22	10	6	14	14	(CM)	14	18	20	16	12	14	10	12	9	6	4	7	8	13	10	12	13	22
11	10	9	8	7	11	(CM)	27	10	20	24	19	39	22	21	19	15	11	6	4	7	7	15	11	6	14	39
12	4	14	8	9	12	7	8	14	21	19	17	16	16	15	14	11	10	7	14	30	6	11	15	11	13	30
13	(CM)	7	9	8	9	9	8	12	22	23	20	19	18	16	12	12	10	5	7	5	7	13	(CM)	8	12	23
14	8	17	8	(CM)	12	11	5	(CM)	17	15	35	27	15	21	20	14	10	5	8	9	4	7	11	(CM)	13	35
15	(CM)	10	12	24	24	13	18	12	13	19	20	20	18	17	15	13	8	6	5	4	6	22	5	7	14	24
16	16	9	7	6	6	23	19	12	9	28	18	15	34	29	25	16	10	7	7	11	11	8	33	10	15	34
17	13	6	6	10	8	11	7	8	36	9	11	13	12	11	12	12	9	9	7	6	14	6	9	6	10	36
18	11	26	24	21	21	8	25	44	27	12	14	12	12	12	10	10	10	8	9	10	9	8	10	10	15	44
19	8	11	7	6	20	17	11	17	11	20	44	27	28	35	24	24	10	3	11	4	6	10	9	15	16	44
20	23	8	14	19	5	8	10	16	28	15	17	19	17	21	18	10	7	9	12	4	6	11	7	8	13	28
21	14	5	24	10	11	13	10	13	17	21	18	23	15	14	13	11	9	8	4	10	21	12	16	20	14	24
22	30	14	15	10	11	12	10	5	7	13	24	17	21	34	41	12	7	11	6	5	17	10	15	7	15	41
23	34	28	10	10	10	12	13	27	29	13	14	17	16	23	36	23	9	11	9	8	9	22	20	13	17	36
24	13	22	16	12	10	17	10	6	18	24	16	15	14	12	10	11	5	10	11	14	10	23	18	8	14	24
25	9	9	8	9	20	11	6	6	13	17	10	13	13	12	11	10	9	9	14	5	14	10	30	26	12	30
26	5	7	5	5	5	7	6	16	15	7	10	10	11	13	10	8	8	10	13	10	23	12	9	16	10	23
27	12	24	8	5	13	48	11	9	9	7	7	7	8	8	9	11	6	0	0	0	0	0	0	0	8	48
28	0	0	0	0	0	0	0	3	14	(CM)	21	27	13	19	12	10	9	5	7	17	12	24	12	12	9	27
29	7	6	8	5	8	10	11	14	32	15	12	11	11	10	12	12	10	11	20	34	8	8	21	27	13	34
30	34	11	8	6	13	15	19	11	14	17	32	23	14	11	15	17	14	11	12	13	27	29	30	12	17	34
31	12	20	27	10	9	16	15	(CM)	15	13	12	13	12	12	12	11	8	13	(CM)	6	7	14	8	9	12	27
AV	13	12	12	10	11	13	12	14	18	17	17	17	16	17	16	13	10	8	9	10	10	13	14	11	13	
PK	34	28	39	27	24	48	34	45	36	40	44	43	34	38	41	29	19	13	20	34	27	29	33	27		48

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	4	2	3	3	7	5	8	17	36	14	11	11	10	15	11	8	9	7	8	13	7	8	6	6	10	36
2	6	6	25	9	30	4	7	8	13	37	22	42	24	34	29	24	18	10	6	5	7	16	15	6	17	42
3	8	7	9	8	4	3	7	8	23	18	10	10	12	11	14	11	9	8	12	16	15	19	11	13	11	23
4	22	23	21	25	25	26	15	33	13	14	14	11	11	12	12	12	11	10	7	29	18	5	14	7	16	33
5	4	4	2	8	7	7	6	9	12	11	11	8	8	7	12	20	6	9	6	0	0	0	0	0	7	20
6	0	0	0	0	0	0	3	20	(CM)	20	13	13	12	17	15	10	8	8	10	10	6	9	25	18	9	25
7	10	14	17	23	29	31	(CM)	40	17	13	14	9	10	10	10	8	9	8	3	6	12	7	9	1	13	40
8	5	7	3	1	1	0	0	0	4	7	11	10	11	12	10	15	13	7	23	10	18	22	11	9	9	23
9	7	5	7	5	5	5	6	6	9	14	14	12	12	9	9	10	11	8	10	7	22	(CM)	13	15	10	22
10	26	22	22	18	5	6	7	18	12	16	16	14	12	14	9	11	8	5	4	5	4	6	8	21	12	26
11	9	(CM)	15	6	(CM)	(CM)	17	13	24	28	15	31	20	17	15	15	10	6	3	4	4	10	18	10	14	31
12	8	14	13	14	16	14	7	9	25	16	17	14	15	13	13	10	9	6	12	11	12	25	16	8	13	25
13	8	13	8	11	7	13	8	12	34	23	19	18	17	13	11	10	9	4	4	4	6	14	(CM)	9	12	34
14	8	4	(CM)	4	8	14	19	22	20	13	37	25	13	17	19	12	9	5	6	13	6	8	13	6	13	37
15	16	13	15	12	15	27	21	8	12	17	18	19	15	14	13	13	7	4	4	4	7	21	5	5	13	27
16	13	18	6	2	2	21	19	20	18	44	18	15	34	27	22	15	8	5	10	11	6	17	28	12	16	44
17	22	6	9	27	29	(CM)	23	14	26	8	10	10	11	10	12	11	8	8	6	5	10	5	7	4	12	29
18	14	24	24	28	11	10	30	50	27	11	12	11	11	10	9	9	9	6	7	9	7	7	8	10	15	50
19	6	10	7	7	(CM)	13	11	11	9	17	37	22	25	30	24	21	10	3	9	4	8	(CM)	5	10	14	37
20	19	12	18	26	14	12	9	12	27	19	18	15	14	18	15	9	7	6	9	4	3	10	25	12	14	27
21	13	4	7	10	23	17	31	8	(CM)	23	14	22	14	13	11	10	8	7	7	16	14	10	13	13	13	31
22	17	9	(CM)	22	10	17	20	16	9	11	20	15	18	39	41	11	5	13	7	8	(CM)	14	17	6	16	41
23	20	20	31	11	4	12	23	23	21	13	13	16	14	23	34	23	9	9	12	7	9	12	5	(CM)	16	34
24	19	21	21	6	13	14	28	11	12	23	17	12	13	10	8	9	4	10	7	13	9	20	17	7	14	28
25	8	8	7	8	21	9	4	5	10	15	9	11	11	11	9	8	8	7	15	5	14	24	28	31	12	31
26	3	6	5	4	3	5	5	16	15	6	9	9	10	12	10	8	7	8	14	10	16	10	7	14	9	16
27	15	13	8	3	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	5	10	6	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	( )	15
28	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	(CM)	14	(CM)	19	25	11	17	12	10	7	3	5	11	9	25	15	12	13	25
29	7	7	9	5	8	9	13	14	30	15	11	11	10	9	10	10	9	10	17	21	7	11	19	31	13	31
30	39	10	8	5	11	15	17	10	15	17	32	21	12	11	14	15	15	13	10	11	26	29	31	12	17	39
31	12	19	23	9	10	16	11	29	15	12	11	11	10	11	13	8	6	10	20	12	20	7	8	7	13	29
AV	12	11	12	11	12	12	13	16	18	17	16	16	14	16	15	12	9	7	9	9	10	13	14	11	13	
PK	39	24	31	28	30	31	31	50	36	44	37	42	34	39	41	24	18	13	23	29	26	29	31	31		50

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	4	3	2	4	5	5	5	9	51	12	10	10	9	13	9	7	8	7	6	9	5	5	6	6	9	51
2	7	7	37	15	20	6	13	7	12	27	22	43	24	31	38	26	21	11	5	3	8	6	23	7	17	43
3	6	8	11	14	10	4	7	8	21	18	9	9	11	9	13	10	9	5	18	27	15	26	36	11	13	36
4	52	19	24	(CM)	23	10	11	34	13	12	12	10	9	11	11	11	11	10	8	27	19	6	9	5	16	52
5	4	3	1	7	6	5	5	9	10	10	10	7	7	6	11	25	6	7	6	0	3	6	(CM)	10	7	25
6	9	6	9	18	21	10	10	11	30	19	11	11	11	15	14	9	7	7	10	13	6	12	21	23	13	30
7	16	12	29	35	44	36	63	29	14	12	13	8	8	9	9	7	8	8	3	3	12	6	8	8	17	63
8	7	8	8	7	6	7	9	8	11	7	10	8	10	11	10	16	12	8	11	10	17	14	10	8	10	17
9	7	6	6	5	4	4	5	6	10	13	14	12	11	8	9	10	11	8	10	7	22	19	15	12	10	22
10	12	12	9	12	3	9	4	8	16	15	14	12	11	12	9	10	7	4	3	3	5	5	6	16	9	16
11	9	10	4	7	3	5	15	15	25	27	14	31	19	18	15	14	10	5	2	2	4	6	9	10	12	31
12	11	12	7	11	9	9	10	8	13	17	16	13	14	13	12	10	8	7	9	11	8	14	14	13	11	17
13	18	10	10	17	6	23	9	12	18	35	19	16	15	10	11	9	8	4	3	4	6	11	12	12	12	35
14	26	6	9	9	7	8	14	7	24	13	28	19	12	16	15	12	8	4	3	8	13	5	7	8	12	28
15	9	11	11	12	11	6	19	8	17	20	23	17	13	11	11	11	7	3	3	4	4	7	6	5	10	23
16	5	9	6	2	2	17	24	24	20	(CM)	18	13	30	27	18	13	8	4	7	5	4	10	17	15	13	30
17	33	27	14	19	25	20	22	15	20	7	9	9	9	9	11	9	7	6	6	5	8	3	5	3	13	33
18	6	25	10	26	16	13	18	24	15	9	10	9	9	9	7	8	8	5	5	8	7	6	7	10	11	26
19	7	10	8	6	11	17	10	8	10	19	35	23	24	29	26	20	8	3	5	5	10	10	6	9	13	35
20	7	7	17	14	12	5	7	16	43	23	17	15	12	13	14	8	8	5	8	5	5	4	8	10	12	43
21	12	7	11	17	19	17	12	5	24	28	13	20	13	12	11	9	7	4	11	12	14	11	8	7	13	28
22	10	22	20	7	7	10	15	15	13	12	23	14	17	26	(CM)	13	5	20	7	8	19	13	15	10	14	26
23	30	11	12	19	4	14	9	20	10	14	16	15	13	21	32	21	8	8	12	9	14	6	2	39	15	39
24	14	9	6	4	13	12	14	6	5	24	15	10	13	9	8	8	4	9	7	11	8	16	15	7	10	24
25	7	7	6	7	15	9	2	3	9	15	8	10	9	8	8	8	7	5	11	6	21	32	28	33	11	33
26	2	7	4	4	3	5	5	18	12	5	8	8	10	11	9	7	7	8	13	8	15	9	6	13	8	18
27	9	16	6	1	0	0	7	7	9	8	1	0	0	0	1	9	0	1	0	3	1	0	1	0	3	16
28	0	0	0	0	0	0	0	6	16	29	17	22	12	16	11	9	6	3	4	6	6	16	13	11	8	29
29	8	7	7	6	7	11	13	15	26	15	10	9	8	8	8	8	8	9	14	22	9	12	18	21	12	26
30	40	9	8	5	12	17	14	9	18	19	30	19	11	10	13	12	14	13	9	12	22	25	26	12	16	40
31	12	17	15	9	12	18	12	36	15	10	10	10	9	9	18	8	5	21	21	12	11	6	8	7	13	36
AV	13	10	11	11	11	11	12	13	18	16	15	14	12	13	13	12	8	7	8	9	10	11	12	12	12	
PK	52	27	37	35	44	36	63	36	51	35	35	43	30	31	38	26	21	21	21	27	22	32	36	39		63

TEMPERATURE # 10M
DEGREE C

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	5	4	4	3	1	2	2	2	6	9	10	11	11	11	9	10	9	7	5	4	4	3	3	2	6	11
2	1	1	0	0	-1	-1	-1	3	7	9	11	13	14	14	16	15	14	12	8	7	6	5	3	3	7	16
3	3	4	4	3	4	4	4	5	10	14	16	16	17	17	18	17	16	13	11	10	9	7	8	8	10	18
4	7	6	4	4	5	4	6	8	12	16	17	18	19	19	19	19	18	16	14	13	12	12	11	10	12	19
5	11	9	8	5	3	2	1	3	6	7	6	3	1	1	1	2	1	0	0	-1	-1	-1	-1	-2	3	11
6	-2	-2	-2	-3	-3	-3	-3	-1	2	6	8	10	12	13	14	13	12	10	7	6	5	4	4	4	5	14
7	4	4	4	4	5	5	6	8	13	14	16	17	17	18	17	14	13	11	9	8	7	5	2	-1	9	18
8	-2	-3	-3	-3	-3	-3	-3	-2	-1	0	3	3	3	1	2	2	1	-1	-3	-3	-3	-3	-3	-4	-1	3
9	-4	-3	-4	-4	-4	-5	-5	-4	-2	-1	1	1	1	0	0	0	0	-1	-1	-2	-2	-3	-3	-4	-2	1
10	-4	-5	-6	-6	-6	-6	-6	-4	-1	1	3	4	3	3	4	4	3	2	1	-2	-3	-3	-3	-5	-1	4
11	-6	-5	-6	-7	-7	-8	-8	-6	-1	2	4	6	7	7	6	6	6	4	3	1	0	-1	-1	-2	0	7
12	-2	-3	-3	-3	-3	-4	-3	-1	-1	2	6	8	8	9	9	9	8	8	5	3	3	3	3	2	3	9
13	1	2	1	0	-1	-1	-1	1	2	4	8	9	10	11	8	9	8	8	5	4	3	2	1	0	4	11
14	-1	-1	-1	-2	-2	-1	-1	1	4	7	11	13	13	14	15	14	14	11	9	7	7	6	4	4	6	15
15	3	3	2	3	2	3	2	3	7	11	14	18	19	19	19	19	17	13	11	9	8	7	8	8	9	19
16	7	5	6	6	6	3	3	4	7	12	14	14	17	17	17	16	14	12	9	8	6	7	5	4	9	17
17	5	4	4	4	4	3	3	4	10	13	15	16	17	16	17	17	14	12	11	11	11	11	9	9	10	17
18	9	6	6	6	5	6	6	6	11	13	14	16	16	16	16	16	14	12	10	9	7	4	1	-1	9	16
19	-3	-4	-4	-6	-7	-7	-8	-6	-3	-1	2	4	5	6	6	5	3	1	0	-1	-2	-2	-2	-2	-1	6
20	-2	-3	-4	-4	-5	-4	-5	-2	1	5	9	12	13	13	12	11	10	8	6	5	4	3	2	2	3	13
21	0	1	1	0	1	0	0	2	6	9	12	13	13	14	14	13	12	9	7	6	3	3	2	2	6	14
22	1	2	2	2	2	3	3	3	6	10	13	14	14	14	15	15	13	11	8	7	6	5	4	4	7	15
23	2	3	3	3	4	4	2	3	7	12	15	18	18	17	19	19	16	13	9	9	9	9	8	7	10	19
24	8	9	8	8	7	6	5	6	9	14	18	19	20	19	17	17	15	14	13	13	13	12	12	11	12	20
25	9	8	7	6	6	7	7	7	8	11	12	13	13	13	13	13	12	11	10	8	7	7	7	7	9	13
26	7	7	7	7	7	7	7	8	9	10	12	11	9	10	9	8	7	6	6	7	7	6	3	3	7	12
27	1	1	1	1	1	1	-1	-2	-2	-2	-2	-1	-1	-1	-1	0	-1	-2	-2	-2	-2	-3	-3	-4	-1	1
28	-4	-6	-7	-7	-8	-8	-7	-6	-2	2	5	7	5	5	4	4	2	-2	-3	-4	-4	-5	-5	-5	-2	7
29	-6	-4	-3	-3	-3	-3	-4	-2	0	2	3	3	3	3	3	3	2	2	2	2	2	1	2	3	0	3
30	2	3	3	3	3	3	4	4	6	7	9	8	8	8	8	8	7	7	6	6	4	4	3	3	5	9
31	3	3	3	3	3	3	3	3	4	6	6	7	7	7	7	5	3	2	2	2	2	2	2	1	4	7
AV	2	1	1	1	0	0	0	2	4	7	9	10	11	11	11	10	9	7	6	5	4	3	3	2	5	
PK	11	9	8	8	7	7	7	8	13	16	18	19	20	19	19	19	18	16	14	13	13	12	12	11		20
MN	-6	-6	-7	-7	-8	-8	-8	-6	-3	-2	-2	-1	-1	-1	-1	0	-1	-2	-3	-4	-4	-5	-5	-5		

MONTHLY MINIMUM = -8

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	7	7	6	5	3	3	3	4	6	7	8	9	9	9	9	9	8	6	5	4	4	3	3	3	6	9
2	2	2	2	0	-1	0	1	2	5	8	9	11	12	13	13	14	13	12	9	8	6	6	-6	4	6	14
3	4	6	4	-2	-2	-1	-1	5	9	13	13	14	15	16	16	16	15	14	12	11	11	8	7	6	9	16
4	7	7	6	4	5	4	3	8	12	14	16	16	17	18	18	18	17	16	14	13	12	13	12	11	12	18
5	11	7	5	6	3	2	2	3	5	6	5	3	1	1	1	2	1	1	1	0	-1	-1	-1	-1	2	11
6	-2	-1	-2	-2	-3	-3	-3	-1	2	4	6	7	9	11	12	12	11	10	8	7	7	6	6	6	4	12
7	5	5	5	5	5	5	5	9	12	14	14	15	16	16	16	14	13	12	10	9	8	3	2	-1	9	16
8	-2	-3	-3	-3	-3	-3	-3	-3	-2	-1	1	2	2	0	1	1	1	-1	-2	-3	-2	-2	-3	-3	-1	2
9	-3	-3	-4	-4	-4	-4	-4	-4	-3	-2	-1	0	0	-1	-1	-1	0	-1	-1	-1	-2	-2	-2	-3	-2	0
10	-4	-4	-5	-5	-5	-5	-6	-4	-2	0	2	3	2	3	3	3	3	2	1	-1	-2	-2	-3	-4	-1	3
11	-6	-5	-6	-7	-7	-7	-7	-5	-2	2	4	5	5	6	6	6	5	4	3	2	1	1	-1	-2	0	6
12	-1	-2	-2	-2	-3	-3	-3	-1	0	2	5	7	7	8	8	8	8	8	6	4	3	3	3	3	3	8
13	3	3	2	0	-1	-1	-1	1	2	4	6	8	8	9	8	8	8	8	6	4	4	3	2	1	4	9
14	1	1	0	-1	-1	-1	-1	1	4	7	9	12	13	13	13	13	13	11	9	8	7	7	6	4	6	13
15	4	4	3	4	3	3	3	4	7	11	13	16	16	17	17	17	16	14	12	11	9	8	9	9	10	17
16	8	6	6	8	8	6	5	6	8	12	13	14	16	16	16	15	13	11	9	10	8	8	6	6	10	16
17	6	4	7	6	5	3	3	5	9	13	14	14	15	15	15	15	13	13	12	12	11	11	11	11	10	15
18	10	8	7	6	6	6	6	6	10	12	13	13	14	14	14	14	13	12	10	8	8	3	1	-1	9	14
19	-3	-4	-4	-5	-6	-6	-6	-6	-3	-1	0	2	3	4	4	4	2	2	1	-1	-1	-1	-2	-2	-1	4
20	-2	-3	-4	-4	-4	-4	-4	-2	1	4	7	10	12	13	12	11	10	8	7	6	6	4	2	2	4	13
21	2	2	2	1	2	1	0	2	6	8	11	12	13	13	13	12	11	9	7	7	4	4	3	3	6	13
22	3	3	3	2	3	4	4	4	7	10	12	13	13	13	14	14	13	11	7	8	6	6	6	6	8	14
23	4	4	3	3	4	6	4	4	7	11	14	16	17	17	18	17	16	13	8	9	9	9	9	7	10	18
24	6	8	9	9	8	7	5	6	8	14	17	17	18	17	16	16	16	14	14	14	13	12	9	11	12	18
25	9	6	7	7	6	7	7	7	8	8	11	12	12	12	12	12	11	9	7	7	8	7	8	8	9	12
26	8	6	4	3	3	3	3	5	8	8	11	11	9	9	9	8	7	7	7	7	7	6	3	3	7	11
27	1	1	1	1	1	1	-1	-2	-2	-2	-2	-2	-1	-1	-1	0	-1	-2	-2	-2	-2	-3	-3	-3	-1	1
28	-4	-5	-6	-6	-6	-7	-7	-6	-2	2	3	4	4	3	3	2	1	-1	-2	-3	-4	-4	-4	-4	-2	4
29	-4	-4	-3	-2	-2	-3	-3	-2	-1	2	2	3	2	3	3	3	2	2	2	2	2	2	3	3	0	3
30	3	3	3	3	3	4	4	5	6	7	8	8	8	8	8	8	7	7	6	6	5	4	3	3	5	8
31	3	3	3	3	3	3	3	3	4	5	6	6	6	6	6	4	3	2	2	2	2	2	2	1	4	6
AV	2	2	2	1	1	1	0	2	4	6	8	9	9	10	10	10	9	8	6	5	5	4	3	3	5	
PK	11	8	9	9	8	7	7	9	12	14	17	17	18	18	18	18	17	16	14	14	13	13	12	11		18
MN	-6	-5	-6	-7	-7	-7	-7	-6	-3	-2	-2	-2	-1	-1	-1	-1	-1	-2	-2	-3	-4	-4	-6	-4		

MONTHLY MINIMUM = -7

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	7	7	6	5	3	3	4	4	6	7	8	8	9	9	9	9	8	6	5	4	4	4	3	3	6	9
2	3	2	2	0	-1	0	0	3	6	8	8	10	11	13	14	14	14	12	9	8	7	6	4	4	7	14
3	4	6	6	5	5	6	6	7	9	13	14	14	16	16	17	16	15	13	12	11	11	9	8	8	10	17
4	8	8	7	6	7	7	8	8	12	15	16	17	17	18	18	18	17	16	14	13	13	13	13	11	13	18
5	12	11	11	8	3	3	2	3	6	6	5	3	1	1	1	1	1	0	0	-1	-1	-1	-1	-1	3	12
6	-2	-1	-1	-2	-3	-3	-3	0	2	4	7	8	9	11	11	12	11	10	8	7	7	7	7	7	5	12
7	6	6	6	4	6	6	7	9	12	14	15	16	16	17	16	13	12	12	11	10	8	5	2	-1	9	17
8	-2	-3	-3	-3	-3	-3	-3	-3	-2	0	2	2	2	1	2	1	1	-1	-2	-3	-3	-2	-2	-4	-1	2
9	-3	-3	-4	-4	-4	-5	-4	-4	-2	-1	1	1	2	1	0	-1	-1	-1	-2	-2	-3	-3	-3	-3	-2	2
10	-4	-4	-5	-5	-5	-5	-5	-3	-1	1	3	3	4	4	4	4	2	2	0	-1	-2	-2	-3	-4	-1	4
11	-5	-5	-6	-7	-7	-7	-6	-4	-1	2	4	6	7	6	6	6	5	4	3	2	2	1	-1	-2	0	7
12	-1	-1	-2	-2	-2	-3	-3	-1	1	2	6	8	8	9	9	9	8	7	6	4	3	3	3	3	3	9
13	3	3	2	0	-1	-1	0	1	3	5	8	8	9	9	8	8	8	7	6	4	4	3	2	2	4	9
14	0	1	1	-1	0	0	-1	2	4	8	9	12	13	13	13	13	12	11	9	8	7	7	6	4	6	13
15	4	4	4	4	3	4	4	6	8	12	14	16	17	17	17	17	16	14	12	11	10	9	9	9	10	17
16	8	8	7	8	8	7	6	6	8	12	14	14	16	16	16	15	13	11	10	10	9	8	7	6	10	16
17	7	6	6	6	6	6	5	7	11	13	14	14	15	15	15	15	13	12	12	12	11	11	11	11	11	15
18	10	8	8	7	6	6	7	7	10	12	13	14	14	14	14	14	13	12	11	9	8	4	1	-1	9	14
19	-3	-4	-4	-6	-6	-7	-7	-6	-2	0	1	3	3	4	4	4	2	1	0	-1	-1	-1	-2	-2	-1	4
20	-2	-2	-3	-4	-4	-4	-4	-2	1	6	9	11	12	13	12	10	9	7	6	6	6	5	3	3	4	13
21	3	2	1	1	1	2	1	3	6	9	11	12	12	13	13	12	11	9	7	6	5	4	4	4	6	13
22	4	3	3	3	3	5	4	6	8	11	12	12	13	13	14	14	13	11	9	8	7	6	6	7	8	14
23	6	5	5	4	6	7	6	6	8	12	16	17	17	17	18	17	16	13	11	10	10	10	11	9	11	18
24	9	11	11	10	9	8	7	8	10	14	17	18	18	18	16	16	15	14	14	14	13	12	12	11	13	18
25	9	8	7	6	6	7	7	7	8	10	11	12	12	12	13	13	12	11	10	9	8	8	8	8	9	13
26	8	8	8	8	8	8	8	9	9	10	11	11	9	9	9	8	7	6	6	7	7	6	3	3	8	11
27	1	1	1	0	0	0	-2	-2	-2	-2	-2	-2	-1	-1	-1	0	-1	-2	-2	-2	-2	-3	-3	-4	-1	1
28	-4	-5	-6	-6	-6	-7	-6	-5	-1	3	3	4	3	3	2	2	1	-1	-2	-3	-4	-4	-4	-4	-2	4
29	-4	-3	-3	-2	-3	-3	-3	-2	0	2	2	3	2	3	3	3	2	2	2	2	2	2	3	3	0	3
30	3	3	3	3	3	4	4	5	6	7	8	8	7	8	8	8	7	7	6	6	4	4	3	3	5	8
31	3	3	3	3	3	3	3	3	4	5	5	6	6	6	6	4	3	2	2	2	2	2	2	1	3	6
AV	3	3	2	2	1	1	1	3	5	7	9	9	10	10	10	10	9	7	6	6	5	4	4	3	5	
PK	12	11	11	10	9	8	8	9	12	15	17	18	18	18	18	18	17	16	14	14	13	13	13	11		18
MN	-5	-5	-6	-7	-7	-7	-7	-6	-2	-2	-2	-2	-1	-1	-1	-1	-1	-2	-2	-3	-4	-4	-4	-4		

MONTHLY MINIMUM = -7

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	139	178	117	111	111	83	150	211	50	-106	-139	-144	-117	-117	-83	-94	-100	-78	-72	-22	-22	-39	33	56	4	211
2	100	67	67	-22	6	56	33	39	-50	-83	-122	-133	-122	-78	-56	-28	-17	-61	22	56	78	0	72	44	-6	100
3	67	72	94	133	39	67	117	150	-6	-89	-78	-94	-94	-100	-89	-89	-61	-11	-6	-11	56	100	33	11	9	150
4	89	156	189	94	122	233	133	50	17	-78	-122	-89	-89	-100	-83	-83	-44	-11	-11	50	33	94	133	72	31	233
5	50	150	217	178	0	-28	-11	-17	-17	-67	-78	-72	-33	-28	-22	-61	-50	-39	-39	-56	-33	17	11	-11	-2	217
6	-6	61	72	11	-22	-33	-17	72	44	-56	-50	-61	-122	-61	-144	-111	-67	-28	0	17	122	183	167	156	5	183
7	144	172	111	44	44	28	83	50	-22	-44	-83	-72	-83	-78	-94	-72	-50	-22	100	194	33	-72	-72	-78	7	194
8	-78	-78	-72	-72	-72	-72	-67	-61	-50	-22	39	-39	-50	-6	33	-61	-67	-33	-28	-44	39	50	22	-56	-35	50
9	-11	-17	-61	-78	-83	-67	-44	-67	-44	-50	-11	33	28	17	-11	-78	-78	-83	-89	-117	-94	-67	-61	-33	-49	33
10	-33	-28	-6	-6	0	-6	33	72	67	17	-6	-17	89	33	44	-28	-83	-94	-83	50	67	44	33	-6	6	89
11	0	-39	-39	-67	-78	11	106	122	44	-17	-6	-39	78	22	-22	-28	-67	-94	-67	33	94	61	22	0	1	122
12	6	44	39	33	44	50	-6	11	56	6	89	-22	17	33	11	-17	-61	-106	-11	33	-11	-56	-6	89	11	89
13	128	44	39	-22	-33	-6	6	0	50	28	44	6	0	-33	-44	-56	-67	-100	-72	39	50	100	61	106	11	128
14	33	22	56	67	78	39	33	89	67	56	-33	-33	-28	0	-61	-78	-83	-44	6	22	-61	17	144	28	14	144
15	33	139	89	78	117	128	167	206	133	56	33	-78	-133	-111	-94	-111	-56	33	78	67	111	194	128	56	53	206
16	150	183	100	150	200	261	139	150	89	39	28	-33	-72	-33	-50	-89	-89	-39	44	172	200	67	61	111	72	261
17	122	83	106	61	128	172	194	222	67	-50	-78	-89	-106	-89	-111	-128	-61	-22	6	28	28	22	67	83	27	222
18	61	144	106	78	44	-11	39	117	-6	-83	-117	-133	-128	-106	-100	-94	-67	-17	67	-33	-44	-72	-72	-78	-21	144
19	-94	-78	-78	-56	-28	-44	6	61	106	67	-44	-50	-106	-72	-78	-100	-78	-78	-67	-11	28	33	6	0	-31	106
20	33	44	28	-11	-17	39	22	83	100	83	33	-28	-44	-28	-61	-67	-61	-117	-33	0	83	161	122	122	20	161
21	178	17	6	44	39	128	67	56	100	67	-33	-61	-72	-72	-106	-100	-83	-33	-28	22	83	67	122	122	22	178
22	294	122	28	128	67	139	89	150	194	6	-72	-122	-100	-117	-78	-56	-61	-56	11	6	6	-17	117	206	37	294
23	272	144	122	56	178	167	228	272	144	33	67	17	-44	-50	-78	-111	-56	-11	83	0	44	83	222	172	81	272
24	83	83	183	206	206	128	83	128	144	11	-94	-122	-106	-83	-56	-50	-33	11	89	67	-17	-39	-44	-39	31	206
25	-50	-56	-56	-44	-39	-33	-17	-28	-44	-72	-89	-106	-100	-83	-78	-72	-61	-44	-17	0	56	56	56	28	-37	56
26	39	61	61	22	50	72	72	44	-28	-61	-78	-100	-100	-72	-72	-83	-78	-56	-22	-44	6	-39	0	-6	-17	72
27	-78	-50	-50	-56	-67	-72	-78	-78	-72	-67	-61	-67	-78	-72	-67	-67	-94	-78	-39	-50	-56	-78	-56	-56	-66	-39
28	-67	-11	67	56	89	39	17	28	106	139	-11	-44	-89	-72	-117	-106	-72	-11	6	28	33	50	22	44	5	139
29	78	67	6	-11	11	-11	0	-6	-11	-56	-50	-56	-56	-56	-56	-56	-56	-61	-50	-28	-22	22	11	-33	-20	78
30	-28	-33	-33	-11	-22	6	6	-22	-39	-33	-61	-67	-61	-56	-56	-50	-39	-39	-17	-39	-61	-61	-61	-61	-39	6
31	-61	-56	-22	-39	-50	-56	-39	-39	-61	-83	-83	-100	-106	-128	-78	-67	-72	-67	-56	-28	0	-33	-72	-83	-62	0
AV	51	52	48	34	34	45	50	67	36	-16	-41	-65	-65	-58	-63	-74	-65	-48	-9	13	27	27	39	31	2	
PK	294	183	217	206	206	261	228	272	194	139	89	33	89	33	44	-17	-17	33	100	194	200	194	222	206		294
MN	-94	-78	-78	-78	-83	-72	-78	-78	-72	-106	-139	-144	-133	-128	-144	-128	-100	-117	-89	-117	-94	-78	-72	-83		

MONTHLY MINIMUM = -144

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	77	85	74	59	67	72	75	71	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	77	72	73	81	81	( )	85
2	85	84	80	84	88	93	94	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	94
3	(RF)	(RF)	(RF)	67	67	67	68	67	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )	68
4	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	58	48	23	20	18	18	18	16	16	16	17	17	18	19	20	22	28	( )	58
5	28	31	38	40	60	86	94	94	77	64	64	83	100	100	100	100	100	100	100	100	100	100	100	100	82	100
6	100	100	100	100	100	100	99	99	97	64	51	38	30	27	22	20	18	17	25	33	40	44	46	46	59	100
7	49	45	46	46	39	32	30	30	20	16	15	14	14	13	13	13	14	14	18	25	26	57	75	94	32	94
8	94	94	94	94	94	94	94	94	94	94	85	69	68	83	83	82	66	78	81	88	90	90	91	94	87	94
9	94	94	94	96	96	96	96	96	94	85	74	64	59	62	71	68	68	74	78	80	90	92	94	94	84	96
10	94	94	94	94	94	95	95	95	74	60	50	44	34	34	34	31	31	33	40	52	59	65	69	81	64	95
11	81	85	87	88	88	89	90	90	91	72	44	34	32	15	16	17	17	19	20	30	38	42	46	56	54	91
12	70	76	76	75	75	76	77	77	84	80	54	40	36	34	30	27	26	26	30	48	59	64	68	68	57	84
13	74	74	74	78	96	96	96	96	96	95	80	60	54	40	33	34	37	34	34	39	47	50	62	68	64	96
14	74	75	79	80	81	82	82	82	68	49	39	28	26	25	25	26	27	31	44	62	77	85	86	89	59	89
15	89	94	94	95	95	95	95	95	74	55	39	29	21	15	14	14	14	14	20	33	40	43	48	48	53	95
16	47	53	57	60	62	68	69	69	67	53	31	27	25	19	17	16	17	20	26	41	47	50	50	51	43	69
17	51	51	52	51	52	55	57	51	31	24	20	19	18	17	16	15	15	17	19	22	25	27	27	27	32	57
18	28	30	34	39	45	46	47	46	43	29	22	17	15	14	13	13	13	13	14	18	19	33	39	48	28	48
19	96	97	97	97	97	97	97	96	80	56	44	38	29	22	18	18	19	22	27	40	47	48	49	51	58	97
20	52	52	57	59	63	65	64	57	44	30	20	18	15	14	14	14	15	17	24	31	34	40	42	38	37	65
21	39	34	34	37	36	36	37	35	31	24	22	20	20	18	17	16	17	23	30	35	38	43	44	50	31	50
22	51	51	52	52	53	54	54	54	48	36	27	23	23	22	21	21	21	27	41	47	52	59	61	62	42	62
23	63	62	61	58	54	57	60	57	45	35	28	23	20	20	20	18	17	20	27	21	31	31	34	34	37	63
24	35	34	34	35	37	38	43	43	41	29	20	18	17	17	17	18	20	22	25	28	27	30	36	41	29	43
25	46	78	81	82	83	83	83	82	80	65	48	45	42	39	38	38	39	41	45	52	60	65	69	70	61	83
26	70	73	79	78	76	78	78	78	63	62	55	53	70	70	70	87	88	99	90	94	87	100	100	100	79	100
27	100	100	100	100	100	100	100	100	99	99	99	99	98	98	97	97	93	93	94	94	94	94	94	94	97	100
28	93	92	91	91	91	91	91	91	79	70	54	47	46	41	45	48	58	74	76	78	82	83	82	82	74	93
29	83	84	73	70	73	72	73	69	51	43	38	36	36	36	36	36	42	51	56	59	62	65	50	46	56	84
30	47	45	45	45	45	46	48	44	43	40	33	33	33	34	34	36	44	46	56	63	79	83	84	87	50	87
31	88	91	92	92	92	92	92	92	79	75	73	69	72	63	77	78	90	97	97	97	97	97	97	98	87	98
AV	69	71	71	71	73	75	76	74	66	55	45	40	38	36	36	36	37	41	45	52	56	61	64	66	57	
PK	100	100	100	100	100	100	100	100	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100		100
MN	28	30	34	35	36	32	30	30	20	16	15	14	14	13	13	13	13	13	14	18	19	20	22	27		

MONTHLY MINIMUM = 13

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	2	1	1	1	1	1	4	17	31	45	49	48	49	35	16	26	12	4	1	1	1	1	1	1	352	49
2	1	1	1	1	1	1	4	17	32	45	55	60	61	55	46	33	17	4	1	1	1	1	1	1	441	61
3	1	1	1	1	1	1	4	14	31	41	57	61	60	47	46	27	14	3	1	1	1	1	1	1	418	61
4	1	1	1	1	1	1	4	16	32	44	55	61	61	55	46	29	13	3	1	1	1	1	1	1	430	61
5	1	1	1	1	1	1	3	16	31	19	16	12	7	10	15	7	4	2	1	1	1	1	1	1	154	31
6	1	1	1	1	1	1	6	22	43	41	55	60	60	55	46	32	17	4	1	1	1	1	1	1	453	60
7	1	1	1	1	1	1	4	16	31	44	55	60	55	49	33	17	10	4	1	1	1	1	1	1	391	60
8	1	1	1	1	1	1	3	6	14	23	43	54	43	17	30	17	8	3	1	1	1	1	1	1	275	54
9	1	1	1	1	1	1	2	10	17	22	34	40	36	29	18	9	6	2	1	1	1	1	1	1	239	40
10	1	1	1	1	1	1	5	22	28	38	49	50	49	38	42	28	10	3	1	1	1	1	1	1	377	50
11	1	1	1	1	1	1	4	17	32	43	52	58	58	40	30	27	15	3	1	1	1	1	1	1	392	58
12	1	1	1	1	1	1	2	5	13	26	52	47	44	53	38	28	12	2	1	1	1	1	1	1	336	53
13	1	1	1	1	1	1	2	6	14	37	52	51	58	46	17	14	11	2	1	1	1	1	1	1	323	58
14	1	1	1	1	1	1	2	13	28	41	47	49	55	50	40	28	13	2	1	1	1	1	1	1	379	55
15	1	1	1	1	1	1	3	14	28	40	49	55	55	50	40	28	11	1	1	1	1	1	1	1	386	55
16	1	1	1	1	1	1	2	10	20	37	37	41	48	43	34	28	11	2	1	1	1	1	1	1	327	48
17	1	1	1	1	1	1	2	13	27	40	46	53	53	41	40	32	8	1	1	1	1	1	1	1	371	53
18	1	1	1	1	1	1	2	11	26	40	50	55	55	50	40	27	12	2	1	1	1	1	1	1	383	55
19	1	1	1	1	1	1	4	21	36	51	61	56	55	49	31	22	7	1	1	1	1	1	1	1	407	61
20	1	1	1	1	1	1	2	12	26	40	49	52	54	48	28	16	8	1	1	1	1	1	1	1	350	54
21	1	1	1	1	1	1	2	11	25	38	47	51	52	47	37	23	10	1	1	1	1	1	1	1	358	52
22	1	1	1	1	1	1	2	10	22	26	28	26	25	19	28	18	8	1	1	1	1	1	1	1	225	28
23	1	1	1	1	1	1	2	10	23	34	44	44	38	30	35	23	9	1	1	1	1	1	1	1	308	44
24	1	1	1	1	1	1	2	10	23	37	46	51	48	31	17	11	4	1	1	1	1	1	1	1	291	51
25	1	1	1	1	1	1	1	4	10	18	20	26	22	16	14	12	4	1	1	1	1	1	1	1	162	26
26	1	1	1	1	1	1	4	5	8	12	12	22	11	7	4	2	1	1	1	1	1	1	1	1	104	22
27	1	1	1	1	1	2	1	2	5	6	9	11	10	11	10	9	4	1	1	1	1	1	1	1	95	11
28	1	1	1	1	1	1	2	8	21	36	46	50	48	41	31	23	9	1	1	1	1	1	1	1	330	50
29	1	1	1	1	1	1	1	5	13	20	17	24	14	13	12	6	2	1	1	1	1	1	1	1	144	24
30	1	1	1	1	1	1	1	2	10	22	20	14	9	10	8	4	2	1	1	1	1	1	1	1	119	22
31	1	1	1	1	1	1	1	3	12	16	16	23	21	34	16	8	2	1	1	1	1	1	1	1	168	34
TL	37	37	37	37	37	38	84	346	713	1022	1268	1363	1314	1119	888	616	274	63	27	31	31	35	35	36	9485	
PK	2	1	1	1	1	2	6	22	43	51	61	61	61	55	46	33	17	4	1	1	1	1	1	1		61

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	784	785	784	785	785	785	786	787	788	789	789	788	788	788	789	790	791	791	792	793	793	793	793	794	789	794
2	794	794	795	795	795	796	796	796	796	796	794	794	793	793	793	792	792	793	793	794	794	794	794	795	794	796
3	795	794	794	794	793	793	793	793	793	792	791	791	789	789	789	789	790	790	791	791	791	791	791	792	792	795
4	792	791	791	791	791	791	791	790	790	789	788	788	787	787	786	786	786	786	786	786	786	786	785	786	788	792
5	786	786	785	786	787	788	788	788	787	787	788	789	789	790	791	791	792	792	792	792	793	794	794	794	790	794
6	795	795	795	795	795	796	795	795	795	795	795	794	793	792	792	792	792	792	792	792	792	791	791	791	793	796
7	792	791	790	790	790	790	789	788	787	786	786	785	784	784	784	784	784	785	785	785	786	787	787	788	787	792
8	789	789	788	789	789	789	790	790	791	791	791	790	790	790	791	791	791	792	792	792	793	794	794	794	791	794
9	794	793	794	794	795	795	795	796	796	796	796	796	796	796	796	797	797	798	798	798	799	798	798	798	796	799
10	799	798	798	799	799	798	798	799	799	798	797	796	795	795	795	794	795	795	795	795	795	796	795	795	797	799
11	796	796	795	795	795	795	795	796	795	794	793	793	789	789	790	792	792	793	794	794	794	794	794	795	794	796
12	795	795	795	795	795	797	796	796	797	797	796	796	795	794	794	795	795	795	796	797	797	797	797	796	796	797
13	796	797	797	797	797	797	797	798	798	796	796	796	795	795	794	795	796	796	797	797	797	797	797	798	797	798
14	798	798	798	798	798	798	798	798	798	798	796	797	796	796	796	796	796	796	797	797	797	798	798	798	797	798
15	798	798	798	799	799	799	799	799	799	798	798	797	797	795	795	796	796	796	797	797	798	798	798	798	798	799
16	798	798	798	798	798	797	797	798	798	797	796	795	794	793	793	793	793	794	794	795	795	795	795	796	796	798
17	795	795	795	795	795	795	794	794	794	792	792	791	791	790	790	790	790	790	790	790	790	791	790	790	792	795
18	790	790	790	790	790	790	790	788	789	789	789	788	788	788	788	788	788	789	788	789	790	792	793	794	790	794
19	795	796	796	797	798	798	798	799	799	798	798	797	797	797	796	796	797	797	797	797	798	797	798	797	797	799
20	798	797	796	797	797	798	797	796	796	795	794	794	792	792	792	792	793	794	795	795	795	795	795	796	795	798
21	796	796	796	796	796	796	796	794	795	797	796	795	795	795	795	795	795	797	797	798	798	798	798	798	796	798
22	799	798	798	798	798	798	799	799	797	798	798	797	797	797	796	796	796	797	797	796	797	797	798	798	797	799
23	797	798	797	797	797	798	797	798	798	797	796	795	795	794	794	794	795	795	795	796	796	796	796	796	796	798
24	796	796	796	796	796	796	796	797	796	796	795	794	793	793	792	793	793	793	794	794	793	794	794	794	795	797
25	794	794	794	794	794	793	793	793	793	793	793	793	792	791	791	791	792	792	792	792	792	793	793	792	793	794
26	793	793	792	792	792	791	791	791	791	792	791	791	790	790	789	786	786	787	786	786	785	785	786	786	789	793
27	787	787	787	787	787	787	788	788	789	789	787	786	786	786	789	790	791	792	793	793	793	794	794	794	789	794
28	795	795	794	794	795	795	795	795	795	793	793	790	794	796	792	789	790	791	791	791	791	791	792	792	793	796
29	791	791	791	790	790	790	789	790	791	792	793	792	791	791	789	786	788	789	788	788	788	788	788	788	790	793
30	788	788	788	787	787	787	787	787	787	787	787	785	786	786	786	786	787	786	786	787	788	788	787	787	787	788
31	787	787	787	787	787	787	788	788	789	789	789	789	787	787	787	787	787	789	790	789	790	790	790	790	788	790
AV	794	794	793	793	794	794	794	794	794	793	793	792	792	792	791	791	792	792	793	793	793	793	793	794	793	
PK	799	798	798	799	799	799	799	799	799	798	798	797	797	797	796	797	797	798	798	798	799	798	798	798		799
MN	784	785	784	785	785	785	786	787	787	786	786	785	784	784	784	784	784	785	785	785	785	785	785	786		

MONTHLY MINIMUM = 784

PRECIPITATION
CM*100

CB-TRACT
TRAILER A823
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1																									( )	
2																									( )	
3																									( )	
4																									( )	
5													(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	
6	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
7	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
8	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
9	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
10	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
11	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
12	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
13	(IM)	(IM)	(IM)	(IM)																					( )	
14																									( )	
15																									( )	
16											(TR)	(TR)													( )	
17					(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	( )	
18	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)																	( )	
19						(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	
20	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
21	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
22	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
23	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
24	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
25	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
26	(IM)	(IM)	(IM)	(IM)	(IM)																5		46		51	46
27	25	8	5				25	(TR)	(TR)	5	13		3	(TR)	5	(TR)	3	(TR)							91	25
28									3	5	(TR)	(TR)	(TR)												8	5
29										(TR)	3	(TR)													3	3
30																									( )	
31																		8			3	5	10	3	28	10
TL	25	8	5	( )	( )	( )	25	( )	3	10	15	( )	3	( )	5	( )	3	8	( )	( )	8	5	56	3	( )	
PK	25	8	5				25		3	5	13		3		5		3	8			5	5	46	3		46

PRECIPITATION
CM*100

CB TRACT
MRI AD28
OCT 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																					(TR)	(TR)	(TR)	(TR)	
2					(TR)	3													3	(TR)					5
3									3	(TR)	(TR)	(TR)							3	(TR)					5
4																				(TR)					
5												3	8	13	13	10	10	10	5	3	(TR)				74
6									5	3											3				10
7																						(TR)	3	3	5
8											13	10	25	3											51
9											8		5												13
10								(TR)	(TR)	(TR)	(TR)	(TR)	(TR)												
11				(TR)	(TR)	(TR)	(TR)	3																	3
12																									
13											18	3									(TR)	(TR)	(TR)	(TR)	20
14																				(TR)	(TR)				
15																									
16																									
17																									
18																									
19										3	3										(TR)				5
20																									
21																									
22																									
23																									
24																								(TR)	
25	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)	(TR)																		
26																					3	(TR)	38	8	48
27	10	18	3	5	5	3													3	(TR)					46
28									(TR)	3	5	5	20	3	41	(TR)	(TR)	(TR)	3	(TR)					79
29																									
30																									
31																		5	13	3		3	8	5	36
TL	10	18	3	5	5	5		3	8	8	46	20	58	18	53	10	10	15	28	5	5	3	48	15	399

```
STABILITY CLASS USING DT/DZ                                                                        CB-TRACT
DT 60-10M                                                                                          TRAILER AA23
WS 10M                                                                                              OCT  1982
                                                                                                   OCCIDENTAL OIL SHALE, INC.

                                                          HOUR (LOCAL STANDARD TIME)

 DAY  1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   AVE

   1  F    F    F    E    F    F    F    F    E    B    B    B    B    B    C    D    B    C    D    E    E    D    E    E    D
   2  F    E    E    E    E    E    E    E    D    C    A    A    A    C    D    D    E    D    E    E    F    E    E    E    D
   3  E    E    F    F    E    E    F    F    E    B    D    D    D    D    C    C    D    E    E    E    E    F    E    E    E
   4  F   ( )   F    F    F    F    F    E    E    C    B    D    D    D    D    C    D    E    E    E    E    F    F    E    E
   5  E    F    F    F    E    D    E    E    E    D    C    D    D    D    E    D    D    D    D   ( )   D   ( )  ( )  ( )   E
   6 ( )  ( )  ( )  ( )  ( )  ( )  ( )   E    E    D    D    D    B    D    B    B    D    D    E    E    F    F    F    F   ( )
   7  F    F    F    E    E    E    F    E    E    D    D    D    D    D    D    D    D    E    E    F    E    D    D    C    E
   8  C    C    D    D    D    D    D    D    D    E    E    D    D    E    E    D    D    D    D    D    E    E    E    D    D
   9  E    E    D    C    C    D    D    D    D    D    E    E    E    D    E    C    C    C    B    B    B    D    D    D    D
  10  D    D    E    E    E    E    E   ( )   E    E    E    E    E    E    E    D    C    B    C    E    E    E    E    E    E
  11  E    D    D    D    C   ( )   F    F    E    E    E    D    F    E    E    D    D    B    D    E    F    E    E    E    E
  12  E    E    E    E    E    E    E    E    E    E    F    E    E    E    E    E    D    A    E    E    E    D    E    F    E
  13 ( )   E    E    E    D    E    E    E    E    E    E    E    E    D    D    D    D    B    D    E    E    F   ( )   F    E
  14  E    E    E   ( )   F    E    E   ( )   E    E    D    D    D    E    D    C    C    D    E    E    D    E    F   ( )   E
  15 ( )   F    F    F    F    F    F    F    F    E    E    C    B    B    B    B    D    E    F    E    F    F    F    E    E
  16  F    F    F    F    F    F    F    F    F    E    E    D    D    D    D    B    B    D    E    F    F    E    E    F    E
  17  F    F    F    E    F    F    F    F    E    D    C    D    C    D    D    D    D    E    E    E    E    E    E    E    E
  18  E    F    F    F    E    E    E    F    E    C    C    D    D    D    D    D    D    D    E    D    D    D    D    C    D
  19  B    C    C    D    D    D    E    E    F    E    D    D    A    D    C    A    C    C    D    E    E    E    E    E    D
  20  E    E    E    E    E    E    E    F    F    F    E    D    D    D    D    D    D    A    D    E    F    F    F    F    E
  21  F    E    E    E    E    F    E    E    F    E    D    D    D    D    B    B    C    D    D    E    F    E    F    F    E
  22  F    F    E    F    E    F    F    F    F    E    D    A    A    A    C    D    D    D    E    E    E    E    F    F    E
  23  F    F    F    E    F    F    F    F    F    E    E    E    D    D    C    A    D    E    F    E    E    F    F    F    E
  24  F    F    F    F    F    F    F    F    F    E    B    B    B    C    D    D    D    E    F    E    E    D    D    D    E
  25  D    D    D    D    D    D    E    D    D    D    B    B    B    C    C    D    D    D    E    E    E    E    E    E    D
  26  E    E    E    E    E    E    E    E    D    D    D    D    D    D    D    D    D    D    E    D    E    D    E    E    E
  27  C    D    D    D    D    D    C    C    D    D    D    D    C    D    D    D    B    C    D    D    D    C    D    D    D
  28  D    E    E    E    F    E    E    E    F   ( )   E    D    B    D    B    B    D    E    E    E    E    E    E    E    E
  29  F    E    E    E    E    E    E    E    E    D    D    D    D    D    D    D    D    D    D    D    E    E    E    D    E
  30  D    D    D    E    E    E    E    E    D    D    D    D    D    D    D    D    D    D    E    D    D    D    D    D    D
  31  D    D    E    D    D    D    D   ( )   D    C    C    B    B    C    C    D    D    D   ( )   D    E    D    D    C    D

 AVE  E    E    E    E    E    E    E    E    E    D    D    D    C    D    D    C    D    D    E    E    E    E    E    E    D


   TOTAL OCCURRENCES:  A= 11     B= 38     C= 50     D=236     E=259     F=127     HOURS MISSING= 23
```

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 10/31/82)

CONCENTRATION MAX UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	1	0	1	0	1	1	1	2	1	1	0	4	3	2	1	1	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	32	31	17	14	28	39	44	47	61	109	93	29	24	33	64	40	22 :	727
TOTAL :	32	31	17	14	28	39	44	47	61	109	93	29	24	33	64	40	22	727
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 10/31/82)

	WIND DIRECTION																	
CONCENTRATION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	3	3	3	5	3	3	3	3	5	3	5	3	7	5	3	7	3	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	1	0	0	0	0	1	0	1	0	1	1	0	1	0 :	6
LT 5. :	32	31	17	13	28	39	44	47	60	109	92	29	23	32	64	39	22 :	721
TOTAL :	32	31	17	14	28	39	44	47	61	109	93	29	24	33	64	40	22	727
MEAN CONC.	2	2	1	2	1	1	1	1	2	1	2	2	1	1	2	2	1	1

0 = NO OBSERVATIONS

```
          NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

    NITROGEN DIOXIDE (NO2)                                                      CATHEDRAL BLUFFS SHALE OIL

                        TRAILER   AB23      PERIOD(10/01/82 TO 10/31/82)
                                                    WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
     MAX             3    3    3    5    3    3    3    5    5    3    5    3    1    3    3    5    3
   UG/M**3
                ......................................................................................
  GT    65. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 60. -  65. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 55. -  60. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 50. -  55. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 45. -  50. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 40. -  45. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 35. -  40. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 30. -  35. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 25. -  30. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 20. -  25. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 15. -  20. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 10. -  15. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
  5. -  10. :    0    0    0    1    0    0    0    1    1    0    1    0    0    0    0    1    0 :     5
  LT     5. :   32   31   17   13   28   39   44   46   60  109   92   29   24   33   64   39   22 :   722
   TOTAL    :   32   31   17   14   28   39   44   47   61  109   93   29   24   33   64   40   22     727
                ......................................................................................

   MEAN          2    2    1    1    1    1    1    1    1    1    1    2    1    1    2    2    1       1
   CONC.

                0 = NO OBSERVATIONS
```

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (03) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 10/31/82)

CONCENTRATION UG/M**3								WIND DIRECTION										
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	84	86	74	74	74	82	78	84	84	92	99	88	84	82	82	84	76	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0 :	7
80. - 90. :	2	4	0	0	0	1	0	1	4	19	17	1	2	2	6	2	0 :	61
70. - 80. :	12	10	2	3	2	2	8	7	7	28	15	10	7	9	19	6	1 :	148
60. - 70. :	13	12	11	6	21	25	21	22	29	38	23	6	7	13	22	25	6 :	300
50. - 60. :	4	4	1	4	2	7	9	10	11	19	17	5	5	8	15	6	9 :	136
40. - 50. :	0	1	2	0	3	3	7	5	10	7	15	6	2	3	4	1	5 :	74
30. - 40. :	1	0	1	1	0	1	0	2	2	2	3	1	1	1	0	0	2 :	18
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	32	31	17	14	28	39	45	47	63	116	94	29	24	36	66	40	23	744
MEAN CONC.	67	68	60	61	63	61	61	61	62	67	65	61	64	63	65	66	54	64

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 10/31/82)

CONCENTRATION UG/M**3		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		114	114	114	114	344	229	114	344	114	114	114	114	114	114	114	114	114	
GT 650.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
500. - 550.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350.	:	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0 :	2
250. - 300.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250.	:	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0 :	2
150. - 200.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150.	:	1	5	3	2	3	7	7	4	5	10	7	1	1	3	8	3	2 :	72
50. - 100.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50.	:	31	26	14	12	23	31	38	42	58	106	87	28	22	33	58	37	21 :	667
TOTAL	:	32	31	17	14	28	39	45	47	63	116	94	29	23	36	66	40	23	743
MEAN CONC.		3	18	20	16	32	26	17	17	9	9	8	3	4	9	13	8	9	12

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 10/31/82)

		WIND DIRECTION																
CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	0	2	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	
GT 13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. - 13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. - 12.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. - 11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. - 10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. - 9.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. - 8.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. - 7.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. - 6.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. - 5.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. - 4.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. - 3.	0	2	0	0	0	0	1	0	0	6	3	0	0	0	0	0	0	12
1. - 2.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT 1.	32	29	17	14	28	39	44	47	60	105	91	29	24	34	60	40	23	716
TOTAL	32	31	17	14	28	39	45	47	60	111	94	29	24	34	60	40	23	728
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 10/31/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	4	2	1	2	1	2	1	1	2	5	4	4	2	2	1	2	1	
GT 13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. - 13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. - 12.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. - 11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. - 10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. - 9.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. - 8.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. - 7.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. - 6.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4. - 5.	1	0	0	0	0	0	0	0	0	3	4	1	0	0	0	0	0	9
3. - 4.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. - 3.	2	2	0	1	0	4	0	0	2	6	9	0	1	1	0	3	0	31
1. - 2.	5	9	1	0	2	4	1	2	3	3	9	2	5	6	14	6	8	80
LT 1.	24	20	16	13	26	31	44	45	55	98	72	26	18	27	46	31	15	607
TOTAL	32	31	17	14	28	39	45	47	60	111	94	29	24	34	60	40	23	728
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(10/01/82 TO 10/31/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	4	5	3	1	2	2	3	3	7	9	7	6	2	4	5	5	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	2
5. - 8. :	0	1	0	0	0	0	0	0	6	17	19	2	0	0	2	1	0 :	48
3. - 5. :	7	11	2	0	0	0	1	7	15	31	26	4	0	5	12	8	0 :	129
1. - 3. :	15	11	9	5	13	31	26	24	27	44	26	11	16	19	39	24	0 :	340
LT 1. :	10	8	6	9	15	8	18	16	15	22	23	12	8	12	13	7	0 :	202
TOTAL :	32	31	17	14	28	39	45	47	63	116	94	29	24	36	66	40	0	721
PERCENT	4.	4.	2.	2.	4.	5.	6.	7.	9.	16.	13.	4.	3.	5.	9.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(10/01/82 TO 10/31/82)

WIND SPEED METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	6	6	5	3	3	4	4	5	10	12	10	8	4	5	7	7	0	
GT 11. :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	2
8. - 11. :	0	0	0	0	0	0	0	0	5	12	16	2	0	0	0	0	0 :	35
5. - 8. :	2	4	1	0	0	0	0	1	7	24	21	2	0	1	11	3	0 :	77
3. - 5. :	8	11	5	1	4	7	17	17	17	29	18	4	7	11	13	14	0 :	183
1. - 3. :	13	6	6	3	12	21	19	18	16	22	19	17	14	17	30	11	0 :	244
LT 1. :	7	9	7	5	13	15	11	13	22	17	8	10	9	7	6	3	0 :	162
TOTAL :	30	30	19	9	29	43	47	49	67	106	82	35	30	36	60	31	0	703
PERCENT	4.	4.	3.	1.	4.	6.	7.	7.	10.	15.	12.	5.	4.	5.	9.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(10/01/82 TO 10/31/82)

WIND SPEED MAX METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	7	7	5	4	4	4	4	6	11	14	12	9	4	5	8	8	0	
GT 11. :	0	0	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0 :	6
8. - 11. :	0	0	0	0	0	0	0	0	4	21	18	2	0	0	1	3	0 :	49
5. - 8. :	2	5	2	0	0	0	0	6	15	26	28	4	0	4	9	8	0 :	109
3. - 5. :	14	15	10	3	5	6	15	16	25	31	17	6	5	20	25	19	0 :	232
1. - 3. :	25	5	10	12	2	18	20	21	25	22	22	14	14	16	19	15	0 :	260
LT 1. :	0	4	5	4	6	4	10	10	8	5	5	3	8	1	5	6	0 :	84
TOTAL :	41	29	27	19	13	28	45	53	79	108	91	29	27	41	59	51	0	740
PERCENT	6.	4.	4.	3.	2.	4.	6.	7.	11.	15.	12.	4.	4.	6.	8.	7.	0.	100.

0 = NO OBSERVATIONS

```
FIVE MAXIMUM SLIDING AVERAGE                                          C-B TRACT
UG/M**3                                                               SITE AB23
                                                                      OCT  1982
                                                                      CATHEDRAL BLUFFS SHALE OIL CO.

        COMPONENT      AVG. TIME       RANK       DAY       HOUR(BEG)      VALUE

          SO2             3 HR
                                         1          4          14             2.6
                                         2          3          22             1.7
                                         3         17          14             1.7
                                         4          2          13             0.9
                                         5          3          12             0.9

          SO2            24 HR
                                         1          3          18             0.7
                                         2         16          19             0.3
                                         3          2          15             0.2
                                         4         10          14             0.1
                                         5         10          14             0.0

          CO              1 HR
                                         1         30           8           300.0
                                         2         30           9           300.0
                                         3         21           8           200.0
                                         4         30          10           200.0
                                         5          1           9           100.0

          CO              8 HR
                                         1         30           3           100.0
                                         2          7           1           100.0
                                         3         17           1           100.0
                                         4         21           3           100.0
                                         5         12           2           100.0

          O3              1 HR
                                         1          7          18           100.1
                                         2          7          17            98.1
                                         3          4          17            92.2
                                         4          7          19            92.2
                                         5          3          17            90.3

          PART           24 HR
                                         1         18           1            26.9
                                         2         22           1            20.9
                                         3          2           1            12.8
                                         4         14           1             9.4
                                         5         26           1             8.4
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

OCTOBER 1982

GASEOUS PARAMETERS

NOX: 100 %

NO: 100

NO2: 100

O3: 100

CO: 100

SO2: 99

H2S: 99

PARTICULATES: 100 %

METEOROLOGICAL PARAMETERS

WIND SPEED
- 10 M: 100 %
- 30 M: 100
- 60 M: 100

WIND DIRECTION
- 10 M: 100
- 30 M: 100
- 60 M: 100

SIGMA HORIZONTAL WIND DIRECTION
- 10 M: 100
- 30 M: 100
- 60 M: 100

TEMPERATURE
- 10 M: 100
- 30 M: 100
- 60 M: 100

DELTA TEMPERATURE: 100

RELATIVE HUMIDITY: 93

SOLAR RADIATION: 100

BAROMETRIC PRESSURE: 100

PRECIPITATION: 53

NOVEMBER

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-485
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-486
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-487
Ozone (O_3) at Station AB23 . . . . II-488
Carbon Monoxide (CO) at Station AB23 . . . . II-489
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-490
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-491
Particulates Daily Average at Stations AB23 . . . . II-492

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-493
Wind Speed at Station AA23 - 30 Meter Level II-494
Wind Speed at Station AA23 - 60 Meter Level II-495
Wind Direction at Station AA23 - 10 Meter Level II-496
Wind Direction at Station AA23 - 30 Meter Level II-497
Wind Direction at Station AA23 - 60 Meter Level II-498
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-499
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-500
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-501
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-502
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-503
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-504
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-505
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-506
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-507
Delta Temperature (60m - 10m) at Station AA23 . . . . II-508
Relative Humidity at Station AB23 - 3 Meter Level II-509
Solar Radiation at Station AB23 . . . . II-510
Barometric Pressure at Station AB23 . . . . II-511
Precipitation at Station AB23 . . . . II-512
Precipitation at Station AD28 . . . . II-513
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-514

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-515
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-516
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-517
Ozone (O_3) at Station AB23. . . . . II-518
Carbon Monoxide (CO) at Station AB23. . . . . II-519
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-520
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-521

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-522
Station AA23 - 30 Meter Level II-523
Station AA23 - 60 Meter Level II-524

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-525

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-526

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	(MT)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	1	0	1	(CA)	(CA)	(CA)	(CA)	(CA)	(PF)	0	0	0	0	0	0	0	0	1	0	1
24	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	0
29	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
30	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(OR)	(OR)	(OR)	(OR)	(OR)	1	0	0	1	0	0	0	0	1	( )	1
AV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0	0	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	1	0	0	0	0	1		1

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	2	0	0	0	0	0	2	0	2	2	2	0	0	2	2	2	0	2	0	0	0	2	2	1	2
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	4	2	2	0	0	0	0	0	2	2	0	0	0	1	4
3	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2	0	2	2	0	0	0	0	0	2
5	2	2	2	2	0	0	2	0	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	4
6	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2	0	2	2	2	2	1	2
7	2	2	2	2	2	2	2	4	6	4	4	2	2	2	2	2	2	2	2	4	2	2	0	2	2	6
8	2	2	2	2	2	2	2	0	0	0	2	4	2	0	2	4	4	2	2	2	2	2	2	0	2	4
9	2	2	0	0	0	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	1	2
10	2	0	0	0	0	2	0	2	2	(MT)	4	2	2	2	0	0	0	0	0	0	0	0	0	0	1	4
11	2	0	0	0	0	0	2	0	2	2	2	2	2	2	2	2	0	0	0	0	0	2	2	0	1	2
12	2	2	0	2	2	0	0	0	2	2	2	2	2	2	2	2	0	0	0	0	0	0	2	2	1	2
13	2	2	0	2	2	0	0	2	2	2	2	4	4	4	4	2	2	0	2	0	0	0	2	0	2	4
14	2	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15	2	2	2	2	2	0	0	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
16	2	2	2	2	2	2	2	2	2	4	4	2	0	0	0	0	2	2	2	2	0	0	0	0	1	4
17	2	2	0	2	0	0	2	2	2	6	8	8	6	6	4	4	4	2	2	2	2	2	2	2	3	8
18	4	2	2	2	2	2	2	2	2	2	2	4	4	4	4	2	2	4	4	4	2	2	0	2	2	4
19	2	2	0	0	2	2	2	2	2	2	2	2	0	0	2	0	0	0	0	0	0	0	0	0	1	2
20	(PF)	0	0	0	0	0	0	0	0	4	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
21	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	0	0	0	0	2	2	2	2	0	1	2
22	2	0	2	0	0	2	0	0	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	6	2	2	0	0	0	0	0	1	6
23	0	0	0	0	0	0	4	4	4	(CA)	(CA)	(CA)	(CA)	(CA)	(PF)	4	2	2	0	0	0	2	0	2	1	4
24	2	0	0	0	0	0	0	0	2	2	8	6	2	2	2	2	2	2	2	2	2	0	0	2	2	8
25	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	0	0	0	2	2	2	4
26	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2
27	2	0	0	2	0	0	0	0	0	2	2	2	2	2	2	2	0	0	2	0	0	0	0	0	1	2
28	2	0	2	0	0	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	2
29	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
30	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(OR)	(OR)	(OR)	(OR)	(OR)	8	8	6	6	6	6	6	4	4	( )	8
AV	2	1	1	1	1	1	1	1	2	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1	
PK	4	2	2	2	2	2	4	4	6	6	8	8	6	6	4	8	8	6	6	6	6	6	4	4		8

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	2	2	0	0	0	0	0	2	0	2	2	2	0	0	2	2	2	0	2	0	0	0	2	2	1	2
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	4	2	2	0	0	0	0	0	2	2	0	0	0	1	4
3	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2	0	2	2	0	0	0	0	0	2
5	2	2	2	2	0	0	2	0	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	4
6	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2	0	2	2	2	2	1	2
7	2	2	2	2	2	2	2	4	6	4	4	2	2	2	2	2	2	2	2	4	2	2	0	2	2	6
8	2	2	2	2	2	2	2	0	0	0	2	4	2	0	2	4	4	2	2	2	2	2	2	0	2	4
9	2	2	0	0	0	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	1	2
10	2	0	0	0	0	2	0	2	2	(MT)	4	2	2	2	0	0	0	0	0	0	0	0	0	0	1	4
11	2	0	0	0	0	0	2	0	2	2	2	2	2	2	2	2	0	0	0	0	0	2	2	0	1	2
12	2	2	0	2	2	0	0	0	2	2	2	2	2	2	2	2	0	0	0	0	0	0	2	2	1	2
13	2	2	0	2	2	0	0	2	2	2	2	4	4	4	4	2	2	0	2	0	0	0	2	0	2	4
14	2	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15	2	2	2	2	2	0	0	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
16	2	2	2	2	2	2	2	2	2	4	4	2	0	0	0	0	2	2	2	2	0	0	0	0	1	4
17	2	2	0	2	0	0	2	2	2	6	6	6	6	6	4	4	4	2	2	2	2	2	2	2	3	6
18	4	2	2	2	2	2	2	2	2	2	2	4	4	4	4	2	2	4	4	4	2	2	0	2	2	4
19	2	2	0	0	2	2	2	2	2	2	2	2	0	0	2	0	0	0	0	0	0	0	0	0	1	2
20	(PF)	0	0	0	0	0	0	0	0	4	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
21	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	0	0	0	0	2	2	2	2	0	1	2
22	2	0	2	0	0	2	0	0	2	2	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	6	2	2	0	0	0	0	0	1	6
23	0	0	0	0	0	0	2	4	2	(CA)	(CA)	(CA)	(CA)	(CA)	(PF)	4	2	2	0	0	0	2	0	0	1	4
24	2	0	0	0	0	0	0	0	2	2	6	6	2	2	2	2	2	2	2	2	2	0	0	2	1	6
25	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	0	0	0	2	2	2	4
26	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2
27	2	0	0	2	0	0	0	0	0	2	2	2	2	2	2	2	0	0	2	0	0	0	0	0	1	2
28	2	0	2	0	0	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	2
29	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
30	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(OR)	(OR)	(OR)	(OR)	(OR)	6	8	6	4	6	6	6	4	2	( )	8
AV	2	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1	
PK	4	2	2	2	2	2	2	4	6	6	6	6	6	6	4	6	8	6	4	6	6	6	4	2		8

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	41	41	41	37	37	33	25	33	39	43	55	71	73	(CA)	71	71	67	61	59	51	47	43	41	59	50	73
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	55	61	63	63	65	63	65	59	59	41	45	49	51	51	56	65
3	55	57	59	57	63	61	59	55	53	65	73	78	78	76	78	76	69	61	63	59	61	61	65	63	64	78
4	65	63	67	63	63	61	65	61	61	69	74	80	78	78	78	76	71	67	65	65	67	69	69	67	68	80
5	69	69	67	65	69	69	67	67	65	78	78	78	76	78	80	78	73	69	69	69	69	69	69	69	71	80
6	71	71	67	69	65	67	67	65	69	78	78	80	80	82	84	86	80	78	76	73	74	76	73	69	74	86
7	69	73	71	69	71	69	69	67	67	76	80	80	84	86	88	88	86	82	80	78	78	80	80	80	77	88
8	73	73	69	65	65	67	65	69	74	74	71	69	65	61	59	53	41	33	31	29	27	29	33	33	55	74
9	29	31	29	29	31	33	31	33	33	39	41	45	57	63	61	59	57	63	63	57	51	57	49	41	45	63
10	53	51	51	49	49	49	55	51	57	65	63	63	59	59	61	59	59	51	45	43	43	45	35	57	53	65
11	65	69	69	69	67	65	67	69	69	71	71	73	74	76	76	76	71	67	61	69	69	69	67	69	69	76
12	65	65	61	63	63	67	69	67	67	69	73	74	78	80	78	76	69	69	69	71	73	74	69	71	70	80
13	69	73	73	73	74	69	73	73	67	69	69	71	74	76	76	78	78	71	74	69	65	65	57	51	70	78
14	47	57	57	59	57	57	57	53	53	55	59	67	71	71	73	73	71	65	63	61	69	73	69	69	62	73
15	67	69	69	69	71	73	69	71	69	71	78	80	84	82	82	82	80	78	76	82	80	78	82	80	76	84
16	74	76	74	74	78	78	78	78	74	73	76	86	86	82	80	80	78	76	76	78	78	80	78	80	78	86
17	78	80	76	78	74	76	76	74	69	74	74	76	78	80	80	80	78	78	74	74	71	74	71	69	76	80
18	69	67	67	69	65	65	61	61	59	65	67	69	63	61	61	57	55	49	49	51	53	53	51	51	60	69
19	49	49	49	47	51	51	57	57	59	57	55	65	78	78	74	69	65	59	65	63	63	65	63	59	60	78
20	(PF)	61	63	63	63	61	61	61	55	57	69	74	74	74	73	73	71	69	67	63	61	57	63	69	65	74
21	67	65	67	67	67	69	69	67	67	73	73	74	76	76	76	76	74	71	69	69	69	69	67	69	70	76
22	67	69	69	69	69	69	69	69	69	69	69	71	71	63	57	63	69	71	69	63	63	57	59	59	66	71
23	49	59	63	61	61	55	59	57	57	61	63	67	69	69	(PF)	78	71	67	61	63	61	65	65	67	63	78
24	65	65	69	73	67	67	61	63	61	63	63	67	74	76	73	71	69	63	65	55	47	51	55	53	64	76
25	53	59	59	61	57	59	57	55	57	57	61	61	63	63	59	59	57	61	55	53	53	39	47	57	57	63
26	49	51	51	49	43	57	63	59	53	61	61	63	65	65	71	67	69	59	51	45	45	51	49	51	56	71
27	59	57	59	57	55	59	65	55	51	63	63	63	65	69	69	69	65	61	55	59	63	57	53	61	60	69
28	63	61	61	63	65	61	63	63	61	61	69	69	69	67	67	67	65	61	69	65	61	65	67	61	64	69
29	63	63	61	59	63	59	63	63	61	65	63	63	( )	( )	59	55	55	55	65	55	67	61	63	57	61	67
30	61	61	65	61	61	57	53	55	(CA)	(CA)	(CA)	(CA)	61	61	59	57	55	51	53	55	53	55	63	59	58	65
AV	61	62	62	61	61	61	62	61	60	65	67	70	72	72	71	70	68	64	63	61	61	61	61	62	64	
PK	78	80	76	78	78	78	78	78	74	78	80	86	86	86	88	88	86	82	80	82	80	80	82	80		88

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	0	0	0	0	0	29	100
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	100	8	100
3	0	100	100	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	19	100
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	19	100
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	100	100	100	100	0	0	0	48	100
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	100	0	0	14	100
14	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	10	100
20	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	6	100
21	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	100
22	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	0	0	0	0	10	100
23	0	0	100	100	0	0	0	0	0	0	0	0	0	0	(PF)	0	0	0	0	0	0	0	0	0	10	100
24	0	0	100	100	0	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	100
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	10	100
26	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	24	100
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	( )	( )	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	100	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
AV	8	8	16	12	0	8	8	8	20	8	12	8	8	11	20	11	8	12	8	12	12	4	0	4	9	
PK	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	100		100

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	5	5	3	3	5	5	3	3	0	0	0	0	0	5	2	5
4	0	0	0	0	0	0	0	0	0	0	3	3	5	3	3	3	3	3	0	0	3	0	0	0	1	5
5	0	0	0	0	0	0	0	0	3	5	5	5	5	8	8	5	8	5	3	3	3	3	5	5	3	8
6	5	3	3	0	3	0	0	0	3	3	5	5	5	3	3	3	0	0	0	0	0	3	3	3	2	5
7	0	0	3	0	3	3	3	3	0	3	8	5	5	3	3	0	3	3	3	3	3	0	0	0	2	8
8	0	0	0	0	0	0	0	0	0	3	3	5	5	5	3	5	0	0	0	0	0	0	0	0	1	5
9	0	0	0	0	0	0	0	0	0	3	3	3	3	0	3	3	3	3	3	3	0	0	0	0	1	3
10	0	0	0	0	0	0	0	0	0	(MT)	3	3	3	0	3	0	0	0	0	0	0	0	0	0	0	3
11	0	3	0	0	0	0	3	0	0	3	3	0	3	3	0	3	3	0	0	3	0	0	0	3	1	3
12	0	0	0	3	3	3	0	0	0	0	3	8	5	5	5	3	3	0	0	0	0	0	0	0	2	8
13	0	0	0	3	0	0	0	0	0	0	3	0	3	3	0	0	0	0	0	0	0	0	0	0	0	3
14	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	0	0	0	0	0	0	0	1	3
15	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	1	3
16	0	0	0	0	0	0	0	0	0	0	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	3
17	0	0	0	0	0	0	0	0	0	5	13	10	10	5	5	3	3	3	3	0	0	0	0	0	3	13
18	0	0	0	0	0	0	0	0	0	0	0	3	3	5	5	3	3	0	3	3	3	3	3	0	1	5
19	0	3	3	3	3	0	0	3	3	0	3	3	5	3	3	3	3	5	3	3	0	0	0	0	2	5
20	(PF)	0	0	0	0	3	3	3	3	3	3	5	5	5	3	3	0	3	0	3	3	0	3	3	2	5
21	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3	3	0	0	0	0	0	0	2	5
22	0	0	3	0	0	3	3	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	5	5	3	3	3	3	0	0	2	5
23	0	0	3	0	0	3	5	5	8	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	5	5	5	3	3	3	3	3	3	8
24	3	5	5	3	5	5	5	3	5	8	8	8	5	5	3	5	3	0	3	0	0	0	0	0	4	8
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	0	0	0	0	0	0	0	0	0	3
27	0	0	0	0	0	0	0	0	0	0	0	0	3	3	5	3	0	0	0	0	0	0	0	0	1	5
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	3
30	0	0	0	0	0	0	0	0	0	0	0	3	3	3	(CA)	3	3	0	0	3	3	3	0	3	1	3
AV	0	1	1	0	1	1	1	1	1	1	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	
PK	5	5	5	3	5	5	5	5	8	8	13	10	10	8	8	5	8	5	5	3	3	3	5	5		13

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	0	1	1	0	0	0	0	0	0	0	0	0	1
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	7	4	3	1	1	0	0	0	0	0	0	0	0	0	0	1	7
6	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	1	3	3	3	3	3	3	1	3
9	3	3	1	1	1	3	3	1	3	4	4	4	4	3	3	4	3	3	3	1	3	1	1	3	3	4
10	3	3	3	1	1	1	1	1	3	(MT)	6	6	4	4	3	3	0	0	0	0	0	0	0	0	2	6
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	1	6	4	4	3	3	1	1	3	1	0	3	1	1	1	1	6
16	0	1	0	1	1	0	1	1	1	3	3	3	3	3	3	1	0	0	0	0	0	0	0	0	1	3
17	0	0	0	0	0	0	0	0	0	0	1	3	3	3	1	0	1	0	0	0	1	0	1	1	1	3
18	0	0	0	0	1	0	0	0	0	1	0	1	3	3	3	3	3	3	3	3	3	3	3	4	2	4
19	3	1	3	4	3	3	3	3	3	1	1	1	1	1	1	3	3	3	3	3	3	1	3	4	2	4
20	(PF)	3	3	3	1	1	3	3	3	3	4	6	4	4	4	3	3	3	3	3	3	3	3	3	3	6
21	3	6	8	8	7	10	7	7	8	8	8	8	8	10	8	10	8	7	7	7	8	8	7	7	8	10
22	7	7	7	7	7	7	7	8	8	7	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	7	7	6	6	6	6	6	6	7	8
23	6	6	6	6	6	6	6	6	6	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	3	6
24	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	3	4	1	0	(CA)	0	0	0	0	0	0	0	0	0	0	4
AV	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	
PK	7	7	8	8	7	10	7	8	8	8	8	8	8	10	8	10	8	7	7	7	8	8	7	7		10

ARTICULATE DATA
UG/M3

C-B TRACT
NOV 1982
OCCIDENTAL OIL SHALE, INC

			STATION		
DAY	AB20	AB23	AB26	AD42	AD56
3	( )	4.6	( )	( )	( )
7	( )	4.2	( )	( )	( )
11	( )	1.8	( )	( )	( )
15	( )	6.9	( )	( )	( )
19	( )	1.8	( )	( )	( )
23	( )	5.3	( )	( )	( )
27	( )	3.1	( )	( )	( )
AVE	( )	3.96	( )	( )	( )
GM	( )	3.55	( )	( )	( )
PEAK	( )	6.9	( )	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	1	1	1	1	1	(CM)	(CM)	1	0	0	2	2	2	2	1	1	1	0	1	0	1	1	1	1	2
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	3	3	3	3	3	4	2	1	0	1	2	0	0	2	4
3	1	0	(CM)	0	0	0	1	0	1	1	(CM)	1	1	1	1	2	3	3	3	(CM)	0	1	1	1	1	3
4	1	2	1	2	1	1	1	1	1	2	1	2	1	1	2	3	3	3	1	2	2	2	2	2	2	3
5	2	2	2	2	3	1	1	1	1	4	5	4	4	4	4	4	3	4	3	2	2	2	2	1	3	5
6	2	2	2	1	1	2	3	2	1	6	8	7	8	8	8	7	6	3	1	2	2	2	2	1	4	8
7	2	2	1	2	1	2	3	3	1	3	3	4	4	4	5	4	4	3	2	1	1	4	2	6	3	6
8	9	6	2	2	2	1	0	4	8	4	4	6	6	7	6	5	4	2	3	1	2	2	2	2	4	9
9	2	2	2	2	2	2	4	3	3	4	4	4	5	5	5	4	3	2	2	2	2	3	2	0	3	5
10	2	3	3	3	2	2	2	2	2	4	6	5	3	4	4	2	3	1	2	1	1	1	1	(WR)	3	6
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	5	4	1	(CM)	1	1	1	2	1	2	2	( )	5
12	0	1	2	1	1	2	1	0	2	3	3	2	3	3	3	2	2	3	3	2	3	2	2	2	2	3
13	3	1	1	1	0	1	1	2	1	(CM)	4	7	7	6	5	6	5	3	4	0	1	0	1	2	3	7
14	1	0	1	2	3	1	1	1	0	1	1	1	0	0	1	1	0	2	3	2	3	3	2	3	1	3
15	3	3	3	3	3	2	2	2	0	1	1	4	5	4	4	4	2	2	3	1	1	1	2	2	2	5
16	2	2	1	2	0	1	2	2	1	1	0	3	4	4	3	3	2	1	2	1	2	2	2	2	2	4
17	1	2	2	2	3	3	3	2	2	1	4	5	5	4	4	4	3	1	1	2	3	3	2	3	3	5
18	3	1	1	1	3	2	1	2	1	2	3	3	5	4	5	4	4	2	2	7	5	3	6	4	3	7
19	4	6	5	3	3	5	7	10	9	7	4	6	4	0	2	1	1	2	3	2	3	3	2	2	4	10
20	(PF)	2	2	1	1	1	0	1	1	0	3	4	3	5	4	3	2	0	1	0	1	2	2	1	2	5
21	2	2	2	3	3	4	4	3	2	4	4	4	5	4	4	4	4	1	2	1	1	1	1	3	3	5
22	3	3	3	3	4	4	5	6	6	6	6	5	5	3	3	3	3	1	1	1	1	1	0	0	3	6
23	0	2	0	1	1	0	1	1	1	0	0	1	2	2	(PF)	2	2	2	2	1	(WR)	(WR)	(WR)	(WR)	1	2
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	0	1	1	2	2	2	2	1	1	0	0	0	1	1	0	1	2
25	1	1	1	1	0	0	0	2	2	1	3	3	4	4	1	1	2	1	1	0	1	1	1	2	2	4
26	1	0	1	0	(CM)	0	0	0	1	1	1	1	1	2	3	3	2	2	1	0	1	0	2	0	1	3
27	1	1	0	1	1	1	1	1	1	(CM)	1	1	1	1	1	1	2	1	(CM)	0	1	1	1	1	1	2
28	1	1	0	0	1	1	2	2	1	1	2	3	4	4	1	2	2	3	4	4	4	3	4	3	2	4
29	4	4	2	1	1	2	2	2	3	2	3	4	4	5	4	4	4	5	4	4	4	5	4	4	3	5
30	5	7	6	7	6	4	4	5	6	5	4	4	4	4	5	4	4	2	4	6	5	6	4	5	5	7
AV	2	2	2	2	2	2	2	2	2	3	3	4	4	4	3	3	3	2	2	2	2	2	2	2	2	
PK	9	7	6	7	6	5	7	10	9	7	8	7	8	8	8	7	6	5	4	7	5	6	6	6		10

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	2	1	1	1	(CM)	(CM)	1	0	1	2	3	2	2	1	1	2	1	2	0	1	2	1	1	3
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	3	4	4	4	3	2	0	2	3	1	0	3	4
3	1	1	0	1	0	0	1	0	1	1	0	1	1	1	1	2	4	4	6	1	1	1	1	1	2	6
4	1	1	2	2	1	1	1	1	1	3	1	2	2	2	3	4	4	4	2	2	1	2	3	3	2	4
5	2	3	3	2	4	3	3	2	1	6	7	5	5	5	4	5	4	6	5	2	2	3	2	1	4	7
6	4	4	2	2	2	4	4	3	1	8	11	10	10	12	12	9	8	4	2	2	3	2	3	2	5	12
7	3	4	2	4	0	3	4	4	2	4	4	6	6	6	7	5	5	4	3	2	3	5	4	8	4	8
8	13	8	3	2	3	2	1	6	11	6	4	8	8	10	9	7	5	3	4	1	2	2	2	3	5	13
9	3	4	3	3	4	3	6	4	4	6	6	6	7	7	6	5	4	4	2	3	3	4	4	1	4	7
10	3	5	4	4	4	4	4	2	2	6	8	7	4	6	6	3	4	1	3	2	3	3	1	(WR)	4	8
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	7	5	2	0	1	2	2	3	1	3	3	( )	7
12	1	1	2	3	3	3	1	1	3	4	4	3	4	4	3	3	3	4	4	3	4	3	3	3	3	4
13	5	2	1	2	1	2	2	2	1	0	5	10	10	8	7	8	7	5	5	1	1	1	1	3	4	10
14	1	(CM)	2	4	4	2	1	1	0	1	1	1	1	0	1	1	0	3	5	4	4	4	4	4	2	5
15	4	4	4	4	4	3	3	1	0	0	2	6	6	6	5	4	4	4	4	2	1	1	2	1	3	6
16	2	2	1	1	1	2	3	3	2	1	0	4	4	4	4	4	2	2	3	2	2	3	3	3	2	4
17	2	2	2	3	4	4	3	3	3	1	5	7	7	5	5	4	4	1	2	3	5	5	4	4	4	7
18	4	2	2	2	4	4	2	2	2	3	4	4	6	6	6	5	6	3	4	9	7	4	8	5	4	9
19	6	8	7	4	4	7	9	14	13	10	5	9	5	1	3	2	1	3	5	4	5	5	4	4	6	14
20	(PF)	4	3	3	3	1	1	1	1	0	4	5	4	6	5	4	2	0	1	1	2	3	4	2	3	6
21	4	4	4	5	5	7	7	5	4	4	5	6	7	5	5	5	5	2	4	1	1	1	1	4	4	7
22	5	5	5	4	6	6	7	9	8	8	9	7	7	4	4	3	3	2	1	1	1	1	1	1	5	9
23	0	2	0	1	1	0	1	1	1	1	0	1	2	3	(PF)	3	3	3	2	1	(WR)	(WR)	(WR)	(WR)	2	3
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	0	1	2	2	2	3	2	1	1	1	1	1	1	2	1	1	3
25	2	1	2	3	1	1	1	3	3	2	4	4	5	4	1	2	2	1	1	0	3	3	2	2	2	5
26	2	1	1	0	0	0	0	0	1	1	2	1	1	2	4	4	3	2	1	1	0	1	2	1	1	4
27	1	1	0	1	1	1	1	1	1	0	1	2	1	1	1	2	2	1	0	(CM)	1	2	0	1	1	2
28	1	1	0	1	1	1	1	2	1	1	3	4	5	5	1	2	3	4	6	7	6	4	5	4	3	7
29	5	7	3	2	1	3	3	3	4	2	4	5	6	6	6	5	6	7	7	5	7	7	6	6	5	7
30	7	10	9	9	8	5	6	7	9	7	6	6	5	5	8	7	5	3	7	8	8	8	6	8	7	10
AV	3	3	3	3	3	3	3	3	3	3	4	5	5	5	5	4	4	3	3	3	3	3	3	3	3	
PK	13	10	9	9	8	7	9	14	13	10	11	10	10	12	12	9	8	7	7	9	8	8	8	8		14

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	2	3	2	1	1	1	0	1	0	2	3	3	3	3	2	2	2	1	2	1	0	3	2	2	3
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	4	4	4	5	4	3	2	2	3	2	1	3	5
3	1	2	1	1	0	2	1	1	1	1	0	1	1	1	2	3	4	6	8	4	3	1	2	2	2	8
4	2	1	3	1	1	2	2	2	1	3	2	3	2	2	3	4	6	7	4	4	2	2	2	3	3	7
5	3	4	4	3	5	4	4	3	2	7	7	6	6	6	5	5	6	8	6	2	2	2	1	2	4	8
6	6	6	3	4	3	5	6	4	2	10	12	11	12	13	13	11	10	7	2	1	3	2	3	1	6	13
7	2	5	4	5	1	3	4	4	2	4	4	7	7	7	8	6	6	5	4	4	4	6	4	10	5	10
8	15	9	4	3	3	3	2	7	13	7	5	8	9	11	10	8	6	4	5	2	3	4	3	4	6	15
9	3	4	4	4	4	4	7	4	5	7	7	7	7	8	7	5	4	5	2	4	4	4	4	2	5	8
10	4	6	5	5	4	5	4	3	3	7	9	8	4	7	7	4	5	2	4	2	4	4	1	(WR)	5	9
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	8	6	2	0	7	7	6	6	5	5	5	( )	8
12	4	4	5	5	5	5	4	5	5	5	4	3	4	4	4	4	4	5	4	3	5	4	4	3	4	5
13	5	3	2	2	2	3	3	4	2	1	7	12	11	9	8	9	8	6	6	2	2	1	1	4	5	12
14	3	2	2	4	6	3	0	1	1	1	1	1	1	1	1	1	0	4	6	6	4	5	4	4	3	6
15	4	4	4	4	4	4	3	2	2	1	3	6	7	7	6	5	4	5	5	4	4	1	1	2	4	7
16	2	2	1	1	1	1	1	2	2	1	1	4	5	5	4	4	2	2	2	2	2	3	2	3	2	5
17	2	3	2	3	4	4	3	2	3	2	6	7	7	6	6	5	5	2	2	3	6	6	5	5	4	7
18	4	4	3	2	4	4	3	3	3	3	4	4	7	7	7	5	7	4	4	11	8	5	9	6	5	11
19	7	9	8	6	5	8	11	17	15	11	6	10	6	2	4	3	2	3	6	5	7	5	5	4	7	17
20	(PF)	5	4	4	4	2	2	2	1	(CM)	4	6	4	7	6	4	3	1	1	2	3	4	5	4	4	7
21	5	5	6	8	8	9	9	7	6	6	6	7	8	6	6	6	6	3	5	3	1	3	2	5	6	9
22	7	7	6	6	7	8	9	11	10	10	10	8	7	4	4	4	4	2	1	1	1	2	1	1	6	11
23	0	1	0	2	2	1	1	2	1	1	0	1	3	3	(PF)	3	2	0	0	0	(WR)	(WR)	(WR)	(WR)	1	3
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	3	1	2	2	2	3	3	2	1	1	1	1	0	3	2	2	3
25	3	2	2	4	3	2	2	4	4	2	4	4	6	5	2	2	3	2	1	1	3	4	2	2	3	6
26	3	2	1	1	1	1	1	1	1	2	2	1	1	3	4	4	3	1	0	1	1	1	1	2	2	4
27	0	2	1	0	1	0	2	0	2	1	2	2	1	1	2	2	2	1	1	10	1	1	0	1	2	10
28	1	1	2	1	2	3	0	1	2	2	4	5	5	5	2	3	4	4	8	8	7	4	7	6	4	8
29	7	9	5	4	1	2	3	3	4	3	4	6	7	8	6	5	7	8	8	7	8	8	8	8	6	9
30	8	12	10	10	10	7	7	9	10	8	7	7	6	5	8	7	6	4	8	10	10	10	8	9	8	12
AV	4	4	4	3	4	4	4	4	4	4	4	5	5	5	5	4	4	4	4	4	4	4	4	4	4	
PK	15	12	10	10	10	9	11	17	15	11	12	12	12	13	13	11	10	8	8	11	10	10	9	10		17

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	228	265	297	273	259	170	(CM)	(CM)	254	311	25	352	340	356	17	358	282	217	341	68	186	225	41	0	308
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	312	321	326	341	338	317	332	340	355	195	180	177	203	231	300
3	205	219	(CM)	236	233	180	118	78	66	68	(CM)	338	33	139	251	240	226	205	208	(CM)	37	86	128	107	163
4	110	109	189	108	112	123	138	98	63	127	245	238	265	231	204	207	197	186	127	129	79	91	105	103	142
5	109	131	108	101	164	140	118	111	101	208	208	215	214	215	216	210	198	199	171	99	109	101	108	102	151
6	172	172	98	114	116	144	154	112	164	197	206	211	211	214	212	209	204	195	83	70	85	82	86	62	151
7	70	140	155	161	47	180	153	145	104	189	195	210	208	209	215	202	189	181	146	113	169	169	127	180	165
8	178	188	243	213	166	206	220	174	198	199	184	193	201	199	199	195	180	144	136	66	88	120	104	99	175
9	100	106	102	111	115	127	169	141	147	187	175	199	207	219	191	223	250	203	144	166	135	167	173	219	165
10	129	127	134	152	132	111	142	51	128	149	197	191	199	176	189	187	214	205	97	55	119	126	298	(WR)	150
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	305	311	335	(CM)	184	218	232	233	232	233	214	( )
12	202	200	202	202	203	202	201	186	153	162	169	158	161	173	163	167	185	167	141	152	138	121	106	100	168
13	160	161	109	90	225	81	149	170	354	(CM)	214	215	226	224	232	281	295	316	323	275	204	59	240	307	224
14	267	180	143	140	139	143	288	229	80	16	9	31	21	318	0	357	34	184	181	169	155	151	141	147	130
15	140	146	140	147	154	145	118	113	71	42	241	217	214	210	208	209	213	178	156	162	115	100	122	118	154
16	123	113	113	111	144	115	126	127	137	51	354	203	225	210	214	176	151	145	99	125	138	115	94	112	133
17	122	100	112	155	162	155	153	138	101	180	214	216	209	197	201	205	194	142	119	157	190	180	179	176	166
18	182	200	182	151	152	143	126	125	86	199	207	197	199	204	202	192	178	163	160	185	175	168	180	177	174
19	166	175	176	168	178	176	192	189	191	196	196	249	274	292	308	272	251	215	201	196	193	191	202	204	206
20	(PF)	202	180	171	168	169	168	167	54	7	207	212	200	202	227	299	279	153	131	129	130	185	192	204	183
21	204	203	192	200	199	200	201	204	184	185	197	204	195	211	212	227	228	223	213	155	106	135	127	181	193
22	189	191	196	193	199	202	202	202	199	205	214	222	222	287	314	320	329	351	305	278	267	256	180	289	236
23	120	218	261	260	245	34	63	66	63	63	337	331	299	293	(PF)	294	294	292	292	292	(WR)	(WR)	(WR)	(WR)	312
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	7	341	311	307	311	293	289	300	45	119	153	247	111	176	292	307
25	245	161	118	200	135	229	168	161	175	330	220	212	230	233	307	0	11	338	257	225	291	284	291	280	240
26	294	275	204	229	(CM)	98	141	180	149	119	356	332	328	335	301	290	285	215	207	27	212	124	247	210	243
27	127	174	275	215	193	59	152	249	254	(CM)	291	309	330	354	333	312	277	245	(CM)	241	183	170	125	165	237
28	163	137	117	166	172	87	82	121	79	93	219	198	211	216	221	183	177	179	212	207	200	193	209	186	172
29	207	206	199	176	54	63	94	137	172	164	196	205	221	204	223	224	221	220	211	198	205	208	199	180	192
30	181	179	179	185	178	156	157	152	168	148	135	117	102	132	102	85	94	93	133	149	147	183	188	172	147
PV	166	172	164	170	166	145	151	147	130	150	221	227	233	232	239	246	234	194	166	160	162	152	162	173	186

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	238	265	304	290	268	172	(CM)	(CM)	248	311	27	344	341	355	17	358	283	226	325	59	90	248	25	4	318
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	313	321	327	342	337	316	333	345	8	63	149	148	170	255	332
3	207	210	197	220	338	193	98	34	79	74	158	337	29	135	249	245	225	206	206	199	225	104	153	129	180
4	127	120	196	120	160	159	158	152	90	129	243	238	259	230	205	209	199	192	184	166	106	112	114	112	164
5	138	154	143	137	175	186	172	161	173	211	211	217	217	218	218	214	201	199	181	124	122	111	126	153	174
6	191	188	132	137	150	166	169	130	167	201	208	213	214	216	215	211	205	194	101	79	94	91	97	87	163
7	79	167	176	175	135	185	145	146	111	190	199	215	213	212	216	204	191	182	157	137	172	169	126	184	172
8	180	192	245	215	158	215	214	177	202	202	188	195	202	202	202	197	182	145	135	100	97	138	122	101	178
9	105	108	104	111	114	136	169	141	148	188	175	201	209	220	193	226	249	205	154	173	138	156	172	192	166
10	135	126	131	143	128	114	148	63	128	152	198	194	197	176	189	190	216	199	99	72	112	113	298	(WR)	149
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	319	319	321	215	180	241	251	252	251	252	252	( )
12	251	252	251	251	253	251	253	251	157	161	167	158	159	174	163	169	192	170	132	153	147	127	114	112	183
13	166	184	125	102	222	91	163	182	328	255	216	217	229	228	235	285	299	318	322	303	238	37	253	308	239
14	293	(CM)	131	135	131	133	284	249	96	37	22	38	28	315	352	3	68	176	176	161	152	143	132	138	109
15	134	135	131	136	148	148	128	146	171	81	234	219	216	212	210	209	215	191	174	188	182	120	124	138	166
16	146	127	134	126	201	121	142	127	143	61	330	204	227	210	214	179	158	153	97	120	150	112	104	123	145
17	142	119	112	139	145	147	150	133	112	186	215	217	211	198	202	207	198	156	112	156	188	176	171	169	165
18	170	184	169	148	152	143	138	134	99	202	213	201	201	206	202	194	181	169	166	187	177	170	181	179	174
19	168	177	180	172	181	177	195	193	194	199	199	253	278	284	302	274	261	222	201	199	193	190	198	204	209
20	(PF)	209	200	191	211	201	168	129	87	35	210	214	202	205	229	299	278	161	133	126	133	197	207	220	190
21	219	220	200	201	201	202	202	206	193	190	199	205	198	215	214	229	230	231	225	212	114	184	161	193	203
22	198	196	200	197	202	206	206	205	202	207	217	227	225	292	320	325	330	352	317	283	273	281	188	326	243
23	114	222	250	264	256	219	76	85	82	75	337	330	298	290	(PF)	289	296	299	299	300	(WR)	(WR)	(WR)	(WR)	294
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	14	340	307	301	309	290	285	288	59	87	140	266	117	195	238	300
25	230	163	149	206	188	216	215	167	181	315	218	213	231	235	304	3	13	346	272	254	297	308	302	278	246
26	290	279	211	225	262	112	145	164	146	119	352	325	328	331	300	290	289	224	207	20	282	109	265	248	261
27	115	143	279	242	214	39	117	280	272	309	286	301	326	6	329	305	272	266	315	(CM)	177	155	100	148	275
28	161	139	135	128	182	170	96	135	117	132	219	200	213	219	221	187	184	183	214	210	201	199	211	191	179
29	212	209	202	188	71	72	100	144	176	167	197	208	223	207	225	226	223	222	214	202	208	212	200	183	195
30	184	180	181	188	179	158	157	152	169	149	136	118	103	134	101	85	94	98	135	152	148	183	191	173	149
PV	172	178	175	174	181	164	159	156	149	163	219	229	234	234	240	247	233	198	177	162	169	154	167	179	195

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	287	278	315	309	288	172	206	241	250	318	44	346	345	356	21	0	289	242	329	52	60	266	22	6	320
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	317	328	334	348	345	323	339	349	13	44	141	139	176	207	345
3	197	202	195	201	225	197	117	251	125	86	161	335	33	135	251	247	225	209	212	204	215	140	186	190	194
4	188	175	202	149	200	195	185	188	180	139	243	239	253	229	205	210	200	197	199	189	187	149	147	151	191
5	178	180	177	176	190	199	191	183	199	211	211	217	218	219	219	214	202	203	194	175	158	134	184	204	193
6	201	195	166	162	174	182	177	154	188	203	208	211	212	215	214	210	204	194	143	88	103	105	115	150	177
7	101	184	192	188	202	190	156	161	132	190	204	214	212	212	216	205	191	182	167	158	171	174	136	188	181
8	183	195	241	213	166	221	211	180	203	204	192	196	201	202	202	197	186	154	137	130	115	162	153	114	183
9	118	119	115	124	121	150	173	152	156	189	176	202	210	220	195	226	243	208	166	183	149	147	166	184	170
10	145	136	139	146	138	126	159	84	136	158	199	195	195	178	191	194	214	199	113	101	110	108	291	(WR)	155
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	305	305	311	261	193	206	220	220	220	220	220	( )
12	220	220	220	220	220	220	220	220	214	158	168	161	162	177	166	174	194	177	142	161	160	143	133	137	183
13	175	199	164	115	221	108	176	192	306	240	217	218	230	230	237	284	299	319	328	322	269	19	297	317	246
14	315	316	123	128	120	130	6	257	211	73	66	51	31	320	349	14	250	180	171	158	161	150	136	147	120
15	141	142	139	140	159	168	163	191	193	232	229	220	216	213	211	210	217	202	189	195	201	184	156	195	188
16	180	175	187	210	211	151	158	136	150	99	255	205	226	211	217	182	169	175	104	131	166	125	127	145	170
17	166	146	118	140	150	153	171	143	122	189	215	217	211	199	204	209	202	169	126	166	192	181	173	163	172
18	160	175	176	156	160	156	155	150	121	204	214	202	204	207	202	197	186	176	172	188	179	176	183	181	179
19	173	179	184	176	188	181	197	194	194	200	202.	253	276	274	305	279	265	235	209	211	199	194	206	210	213
20	(PF)	221	215	211	230	216	187	185	146	(CM)	211	215	205	207	229	304	289	255	131	127	138	208	216	223	208
21	221	225	209	207	208	208	208	210	200	195	202	206	200	216	215	229	230	232	229	226	176	205	199	202	211
22	206	202	204	202	205	208	208	206	203	208	217	227	227	292	323	331	338	0	347	315	308	307	241	332	253
23	114	225	265	260	259	241	45	88	104	87	354	337	307	300	(PF)	294	299	299	302	297	(WR)	(WR)	(WR)	(WR)	301
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	305	334	311	303	311	295	286	262	94	102	176	281	174	200	215	270
25	215	172	176	200	197	230	240	183	192	302	221	213	231	236	306	4	13	354	298	37	309	329	322	285	255
26	294	290	225	200	230	102	151	165	147	125	350	325	328	336	308	299	299	246	173	27	349	104	253	266	270
27	219	139	80	84	214	354	115	352	269	216	294	304	336	21	329	303	260	260	302	47	184	143	321	139	295
28	182	192	156	140	192	200	184	168	195	176	218	203	214	220	219	191	192	189	214	210	202	203	211	197	195
29	214	210	206	197	97	88	114	159	182	174	198	208	222	208	225	227	223	223	216	206	210	214	202	186	197
30	188	183	183	189	181	162	159	154	171	154	143	126	112	143	108	94	104	117	143	156	152	183	193	176	154
PV	187	191	183	177	191	177	173	178	178	184	215	229	234	234	241	248	237	209	179	164	178	167	189	190	206

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	228	265	297	273	259	170	***	***	254	311	25	352	340	356	17	358	282	217	341	68	186	225	41	0	320	0.5
2	***	***	***	***	***	***	***	***	***	***	312	321	326	341	338	317	332	340	355	195	180	177	203	231	322	1.4
3	205	219	***	236	233	180	118	78	66	68	***	338	33	139	251	240	226	205	208	***	37	86	128	107	182	0.5
4	110	109	189	108	112	123	138	98	63	127	245	238	265	231	204	207	197	186	127	129	79	91	105	103	151	1.0
5	109	131	108	101	164	140	118	111	101	208	208	215	214	215	216	210	198	199	171	99	109	101	108	102	175	1.8
6	172	172	98	114	116	144	154	112	164	197	206	211	211	214	212	209	204	195	83	70	85	82	86	62	188	2.6
7	70	140	155	161	47	180	153	145	104	189	195	210	208	209	215	202	189	181	146	113	169	169	127	180	178	2.3
8	178	188	243	213	166	206	220	174	198	199	184	193	201	199	199	195	180	144	136	66	88	120	104	99	185	3.3
9	100	106	102	111	115	127	169	141	147	187	175	199	207	219	191	223	250	203	144	166	135	167	173	219	175	2.3
10	129	127	134	152	132	111	142	51	128	149	197	191	199	176	189	187	214	205	97	55	119	126	298	***	160	2.0
11	***	***	***	***	***	***	***	***	***	***	***	***	***	305	311	335	***	184	218	232	233	232	233	214	****	****
12	202	200	202	202	203	202	201	186	153	162	169	158	161	173	163	167	185	167	141	152	138	121	106	100	162	1.8
13	160	161	109	90	225	81	149	170	354	***	214	215	226	224	232	281	295	316	323	275	204	59	240	307	239	1.6
14	267	180	143	140	139	143	288	229	80	16	9	31	21	318	0	357	34	184	181	169	155	151	141	147	150	0.8
15	140	146	140	147	154	145	118	113	71	42	241	217	214	210	208	209	213	178	156	162	115	100	122	118	170	1.8
16	123	113	113	111	144	115	126	127	137	51	354	203	225	210	214	176	151	145	99	125	138	115	94	112	147	1.3
17	122	100	112	155	162	155	153	138	101	180	214	216	209	197	201	205	194	142	119	157	190	180	179	176	178	2.2
18	182	200	182	151	152	143	126	125	86	199	207	197	199	204	202	192	178	163	160	185	175	168	180	177	179	2.9
19	166	175	176	168	178	176	192	189	191	196	196	249	274	292	308	272	251	215	201	196	193	191	202	204	197	3.5
20	***	202	180	171	168	169	168	167	54	7	207	212	200	202	227	299	279	153	131	129	130	185	192	204	200	1.4
21	204	203	192	200	199	200	201	204	184	185	197	204	195	211	212	227	228	223	213	155	106	135	127	181	200	2.6
22	189	191	196	193	199	202	202	202	199	205	214	222	222	287	314	320	329	351	305	278	267	256	180	289	220	2.4
23	120	218	261	260	245	34	63	66	63	63	337	331	299	293	***	294	294	292	292	292	***	***	***	***	298	0.7
24	***	***	***	***	***	***	***	***	***	7	341	311	307	311	293	289	300	45	119	153	247	111	176	292	306	0.6
25	245	161	118	200	135	229	168	161	175	330	220	212	230	233	307	0	11	338	257	225	291	284	291	280	236	0.8
26	294	275	204	229	***	98	141	180	149	119	356	332	328	335	301	290	285	215	207	27	212	124	247	210	273	0.6
27	127	174	275	215	193	59	152	249	254	***	291	309	330	354	333	312	277	245	***	241	183	170	125	165	242	0.4
28	163	137	117	166	172	87	82	121	79	93	219	198	211	216	221	183	177	179	212	207	200	193	209	186	190	1.8
29	207	206	199	176	54	63	94	137	172	164	196	205	221	204	223	224	221	220	211	198	205	208	199	180	202	2.9
30	181	179	179	185	178	156	157	152	168	148	135	117	102	132	102	85	94	93	133	149	147	183	188	172	152	4.2
VD	168	171	165	165	165	155	159	161	166	179	205	214	218	218	222	229	224	198	173	164	162	163	166	166	187	
VV	1.7	1.8	1.4	1.5	1.5	1.4	1.6	1.8	1.6	1.9	2.3	2.7	2.7	2.5	2.2	1.7	1.5	1.2	1.2	1.1	1.4	1.5	1.3	1.3		1.5

TOTAL NUMBER OF OBSERVATIONS = 671

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	238	265	304	290	268	172	***	***	248	311	27	344	341	355	17	358	283	226	325	59	90	248	25	4	326	0.8
2	***	***	***	***	***	***	***	***	***	***	313	321	327	342	337	316	333	345	8	63	149	148	170	255	331	1.8
3	207	210	197	220	338	193	98	34	79	74	158	337	29	135	249	245	225	206	206	199	225	104	153	129	198	0.8
4	127	120	196	120	160	159	158	152	90	129	243	238	259	230	205	209	199	192	184	166	106	112	114	112	171	1.5
5	138	154	143	137	175	186	172	161	173	211	211	217	217	218	218	214	201	199	181	124	122	111	126	153	189	3.0
6	191	188	132	137	150	166	169	130	167	201	208	213	214	216	215	211	205	194	101	79	94	91	97	87	193	4.1
7	79	167	176	175	135	185	145	146	111	190	199	215	213	212	216	204	191	182	157	137	172	169	126	184	182	3.5
8	180	192	245	215	158	215	214	177	202	202	188	195	202	202	202	197	182	145	135	100	97	138	122	101	187	4.6
9	105	108	104	111	114	136	169	141	148	188	175	201	209	220	193	226	249	205	154	173	138	156	172	192	173	3.3
10	135	126	131	143	128	114	148	63	128	152	198	194	197	176	189	190	216	199	99	72	112	113	298	***	155	3.0
11	***	***	***	***	***	***	***	***	***	***	***	***	***	319	319	321	215	180	241	251	252	251	252	252	****	****
12	251	252	251	251	253	251	253	251	157	161	167	158	159	174	163	169	192	170	132	153	147	127	114	112	171	2.2
13	166	184	125	102	222	91	163	182	328	255	216	217	229	228	235	285	299	318	322	303	238	37	253	308	244	2.3
14	293	***	131	135	131	133	284	249	96	37	22	38	28	315	352	3	68	176	176	161	152	143	132	138	143	1.5
15	134	135	131	136	148	148	128	146	171	81	234	219	216	212	210	209	215	191	174	188	182	120	124	138	178	2.5
16	146	127	134	126	201	121	142	127	143	61	330	204	227	210	214	179	158	153	97	120	150	112	104	123	155	1.7
17	142	119	112	139	145	147	150	133	112	186	215	217	211	198	202	207	198	156	112	156	188	176	171	169	176	3.1
18	170	184	169	148	152	143	138	134	99	202	213	201	201	206	202	194	181	169	166	187	177	170	181	179	181	4.0
19	168	177	180	172	181	177	195	193	194	199	199	253	278	284	302	274	261	222	201	199	193	190	198	204	201	5.1
20	***	209	200	191	211	201	168	129	87	35	210	214	202	205	229	299	278	161	133	126	133	197	207	220	207	2.1
21	219	220	200	201	201	202	202	206	193	190	199	205	198	215	214	229	230	231	225	212	114	184	161	193	206	4.1
22	198	196	200	197	202	206	206	205	202	207	217	227	225	292	320	325	330	352	317	283	273	281	188	326	221	3.4
23	114	222	250	264	256	219	76	85	82	75	337	330	298	290	***	289	296	299	299	300	***	***	***	***	295	0.9
24	***	***	***	***	***	***	***	***	***	14	340	307	301	309	290	285	288	59	87	140	266	117	195	238	290	0.7
25	230	163	149	206	188	216	215	167	181	315	218	213	231	235	304	3	13	346	272	254	297	308	302	278	238	1.3
26	290	279	211	225	262	112	145	164	146	119	352	325	328	331	300	290	289	224	207	20	282	109	265	248	284	0.8
27	115	143	279	242	214	39	117	280	272	309	286	301	326	6	329	305	272	266	315	***	177	155	100	148	268	0.4
28	161	139	135	128	182	170	96	135	117	132	219	200	213	219	221	187	184	183	214	210	201	199	211	191	197	2.6
29	212	209	202	188	71	72	100	144	176	167	197	208	223	207	225	226	223	222	214	202	208	212	200	183	204	4.2
30	184	180	181	188	179	158	157	152	169	149	136	118	103	134	101	85	94	98	135	152	148	183	191	173	153	6.0
VD	175	178	173	172	173	166	168	168	172	184	206	216	220	221	223	231	225	202	177	171	168	165	172	175	191	
VV	2.5	2.8	2.0	2.1	2.2	2.1	2.4	2.6	2.4	2.5	3.1	3.7	3.6	3.3	2.9	2.3	2.1	1.9	1.8	1.8	2.1	2.1	2.0	2.0		2.2

TOTAL NUMBER OF OBSERVATIONS = 677

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	287	278	315	309	288	172	206	241	250	318	44	346	345	356	21	0	289	242	329	52	60	266	22	6	336	1.0
2	***	***	***	***	***	***	***	***	***	***	317	328	334	348	345	323	339	349	13	44	141	139	176	207	341	2.1
3	197	202	195	201	225	197	117	251	125	86	161	335	33	135	251	247	225	209	212	204	215	140	186	190	207	1.6
4	188	175	202	149	200	195	185	188	180	139	243	239	253	229	205	210	200	197	199	189	187	149	147	151	195	2.3
5	178	180	177	176	190	199	191	183	199	211	211	217	218	219	219	214	202	203	194	175	158	134	184	204	200	4.1
6	201	195	166	162	174	182	177	154	188	203	208	211	212	215	214	210	204	194	143	88	103	105	115	150	196	5.6
7	101	184	192	188	202	190	156	161	132	190	204	214	212	212	216	205	191	182	167	158	171	174	136	188	187	4.5
8	183	195	241	213	166	221	211	180	203	204	192	196	201	202	202	197	186	154	137	130	115	162	153	114	189	5.6
9	118	119	115	124	121	150	173	152	156	189	176	202	210	220	195	226	243	208	166	183	149	147	166	184	176	4.0
10	145	136	139	146	138	126	159	84	136	158	199	195	195	178	191	194	214	199	113	101	110	108	291	***	160	3.8
11	***	***	***	***	***	***	***	***	***	***	***	***	***	305	305	311	261	193	206	220	220	220	220	220	****	****
12	220	220	220	220	220	220	220	220	214	158	168	161	162	177	166	174	194	177	142	161	160	143	133	137	186	3.7
13	175	199	164	115	221	108	176	192	306	240	217	218	230	230	237	284	299	319	328	322	269	19	297	317	245	2.8
14	315	316	123	128	120	130	6	257	211	73	66	51	31	320	349	14	250	180	171	158	161	150	136	147	143	1.6
15	141	142	139	140	159	168	163	191	193	232	229	220	216	213	211	210	217	202	189	195	201	184	156	195	192	3.4
16	180	175	187	210	211	151	158	136	150	99	255	205	226	211	217	182	169	175	104	131	166	125	127	145	176	2.0
17	166	146	118	140	150	153	171	143	122	189	215	217	211	199	204	209	202	169	126	166	192	181	173	163	184	3.6
18	160	175	176	156	160	156	155	150	121	204	214	202	204	207	202	197	186	176	172	188	179	176	183	181	183	4.9
19	173	179	184	176	188	181	197	194	194	200	202	253	276	274	305	279	265	235	209	211	199	194	206	210	204	6.0
20	***	221	215	211	230	216	187	185	146	***	211	215	205	207	229	304	289	255	131	127	138	208	216	223	214	2.9
21	221	225	209	207	208	208	208	210	200	195	202	206	200	216	215	229	230	232	229	226	176	205	199	202	212	5.5
22	206	202	204	202	205	208	208	206	203	208	217	227	227	292	323	331	338	0	347	315	308	307	241	332	223	4.1
23	114	225	265	260	259	241	45	88	104	87	354	337	307	300	***	294	299	299	302	297	***	***	***	***	298	0.6
24	***	***	***	***	***	***	***	***	***	305	334	311	303	311	295	286	262	94	102	176	281	174	200	215	275	1.0
25	215	172	176	200	197	230	240	183	192	302	221	213	231	236	306	4	13	354	298	37	309	329	322	285	239	1.6
26	294	290	225	200	230	102	151	165	147	125	350	325	328	336	308	299	299	246	173	27	349	104	253	266	292	0.8
27	219	139	80	84	214	354	115	352	269	216	294	304	336	21	329	303	260	260	302	47	184	143	321	139	356	0.3
28	182	192	156	140	192	200	184	168	195	176	218	203	214	220	219	191	192	189	214	210	202	203	211	197	203	3.6
29	214	210	206	197	97	88	114	159	182	174	198	208	222	208	225	227	223	223	216	206	210	214	202	186	206	5.3
30	188	183	183	189	181	162	159	154	171	154	143	126	112	143	108	94	104	117	143	156	152	183	193	176	158	7.3
VD	188	190	186	182	184	179	182	181	186	189	207	216	220	222	224	231	224	203	186	175	179	175	185	189	197	
VV	3.3	3.6	2.9	2.9	2.9	3.0	3.1	3.3	3.3	3.3	3.6	4.2	4.0	3.8	3.2	2.7	2.7	2.6	2.5	2.3	2.8	2.6	2.6	2.8		2.9

TOTAL NUMBER OF OBSERVATIONS = 680

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	12	7	10	11	8	5	(CM)	(CM)	14	25	28	17	14	16	15	17	9	4	12	10	24	12	18	19	14	28
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	10	10	15	13	11	8	6	8	12	6	7	23	14	11	23
3	9	25	(CM)	24	16	12	11	18	9	25	(CM)	27	35	24	30	20	10	7	7	(CM)	23	8	10	8	17	35
4	7	4	14	11	16	13	19	9	13	15	24	20	25	35	19	13	9	8	18	10	14	7	8	8	14	35
5	11	15	9	7	7	21	13	13	22	12	10	12	12	12	12	9	8	7	7	8	8	7	7	13	11	22
6	19	18	20	28	23	14	16	19	31	11	10	11	11	10	10	9	9	17	16	9	12	15	9	26	16	31
7	13	12	26	11	27	26	5	5	26	21	30	14	11	13	13	18	11	5	4	7	10	7	10	9	14	30
8	7	9	8	16	10	14	20	11	12	14	17	13	14	12	11	12	8	6	8	10	5	8	9	8	11	20
9	5	5	5	5	8	18	4	7	10	11	12	14	17	13	12	10	11	18	14	15	7	5	16	17	11	18
10	9	6	6	4	6	8	12	13	24	15	13	12	16	9	10	11	11	11	6	5	9	16	5	(WR)	10	24
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	8	8	10	(CM)	7	5	0	0	0	0	2	( )	10
12	2	1	0	0	0	0	0	2	9	7	8	12	12	9	10	8	6	4	5	6	8	14	11	12	6	14
13	7	27	38	35	37	29	36	33	27	(CM)	14	9	10	10	10	11	10	10	10	15	10	12	9	7	18	38
14	9	10	8	7	7	13	8	8	14	13	13	25	21	27	18	10	9	11	8	21	3	4	6	5	12	27
15	6	7	7	7	9	6	6	12	33	26	42	10	11	11	10	11	7	4	6	27	20	20	6	5	13	42
16	11	5	6	6	17	7	5	5	10	10	27	12	11	10	13	10	9	24	11	17	9	11	15	17	12	27
17	33	12	7	8	9	7	7	6	8	22	12	12	11	12	9	11	8	18	15	7	5	5	6	6	11	33
18	6	17	13	9	4	5	6	6	11	24	19	20	13	15	16	18	10	12	19	9	10	15	8	14	12	24
19	14	10	11	13	15	11	11	9	8	10	15	10	13	36	18	22	16	12	5	8	7	7	7	7	12	36
20	(PF)	6	5	7	0	0	0	0	9	19	14	12	13	13	11	11	8	20	8	13	5	6	6	11	9	20
21	3	4	6	6	6	7	6	7	14	10	10	11	12	15	17	14	11	18	14	19	10	36	14	7	12	36
22	6	6	7	9	10	10	10	8	9	10	9	11	10	9	8	10	11	14	12	4	4	11	25	17	10	25
23	11	4	24	11	11	16	6	5	7	24	25	18	14	12	(PF)	8	3	0	0	0	(WR)	(WR)	(WR)	(WR)	10	25
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	11	11	12	12	11	9	7	5	8	7	16	24	8	22	29	13	29
25	10	25	11	24	28	16	16	5	12	15	11	12	10	10	17	20	11	13	11	14	4	10	8	7	13	28
26	7	14	7	25	(CM)	30	42	34	29	17	14	22	29	14	9	9	5	4	6	25	9	16	5	7	16	42
27	6	7	23	8	10	7	13	8	16	(CM)	12	12	17	18	11	7	9	10	(CM)	16	7	10	16	17	12	23
28	10	11	14	17	16	17	7	7	9	19	12	11	12	9	21	11	7	11	11	10	9	12	10	9	12	21
29	12	10	26	53	39	16	12	14	16	27	21	12	12	11	9	9	9	10	8	7	8	8	7	8	15	53
30	9	7	7	8	7	9	8	7	9	11	14	12	16	16	9	8	15	27	10	8	8	8	9	8	10	27
AV	10	11	12	14	13	12	12	10	15	16	16	14	15	15	13	12	9	11	9	11	10	11	11	11	12	
PK	33	27	38	53	39	30	42	34	33	27	42	27	35	36	30	22	16	27	19	27	24	36	25	29		53

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	12	7	9	11	9	5	(CM)	(CM)	7	33	30	16	14	15	12	16	8	4	12	8	24	11	12	17	13	33
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	8	10	13	12	10	7	5	5	13	4	4	13	24	10	24
3	11	13	20	16	14	17	8	20	9	20	43	27	33	27	35	19	8	5	4	41	33	20	16	20	20	43
4	16	12	17	25	28	17	15	21	18	12	20	17	24	30	18	10	7	6	32	14	35	16	11	10	18	35
5	14	17	13	7	7	18	11	10	34	11	9	10	10	10	11	9	7	5	7	19	11	8	16	24	12	34
6	18	11	22	27	18	17	12	14	27	9	9	10	9	9	8	8	7	12	23	16	10	16	10	36	15	36
7	13	13	22	11	50	23	5	5	25	20	25	12	10	12	11	17	9	3	5	8	10	7	8	8	14	50
8	6	8	8	14	9	12	23	10	10	12	14	12	13	11	10	11	6	5	6	11	5	9	13	5	10	23
9	4	3	3	4	6	15	3	6	8	9	11	12	16	12	11	10	10	14	18	10	12	3	5	18	9	18
10	9	4	5	3	6	6	13	15	18	13	12	11	18	9	10	9	9	12	5	6	6	8	7	(WR)	9	18
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	0	0	8	14	4	3	0	0	0	0	0	( )	14
12	0	0	0	0	0	0	0	0	6	6	8	10	10	8	9	6	5	3	3	4	6	15	8	11	5	15
13	7	24	31	25	31	26	41	28	37	29	12	8	9	9	9	10	9	8	10	12	12	11	8	6	17	41
14	8	(CM)	8	6	7	13	12	5	16	17	16	26	23	30	19	11	14	9	4	11	3	4	5	4	12	30
15	5	5	5	5	6	6	9	20	30	51	29	10	10	10	9	10	5	4	5	20	33	18	11	15	14	51
16	19	8	21	14	21	11	5	4	7	11	19	9	9	10	12	9	9	24	9	15	14	11	19	23	13	24
17	22	12	5	6	6	6	5	5	6	18	10	10	9	10	8	10	8	20	11	7	4	2	3	2	9	22
18	2	11	7	6	3	4	7	6	10	21	15	17	12	14	15	15	10	12	17	9	10	16	8	13	11	21
19	14	10	10	12	14	12	10	8	9	9	15	8	5	35	18	17	11	10	3	5	5	6	4	4	11	35
20	(PF)	3	6	10	7	15	24	23	22	19	13	10	13	12	10	10	8	13	5	8	5	5	3	7	11	24
21	3	2	4	4	4	5	4	4	9	9	8	10	10	15	16	12	10	15	10	26	27	25	19	6	11	27
22	5	4	6	9	9	9	9	8	8	10	8	10	8	8	7	9	10	9	15	7	5	11	13	13	9	15
23	11	8	22	8	9	21	6	7	6	22	28	17	13	11	(PF)	7	2	0	0	0	(WR)	(WR:	(WR)	(WR)	10	28
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	11	12	11	11	9	7	6	5	7	5	17	15	9	15	20	11	20
25	9	19	11	11	37	16	21	7	12	15	10	11	9	10	18	15	10	12	9	25	3	6	8	7	13	37
26	6	10	9	29	20	35	34	31	22	16	13	26	31	12	8	7	5	6	14	7	18	12	9	9	16	35
27	7	5	20	16	9	8	16	19	6	35	10	11	21	19	12	6	14	7	8	(CM)	9	7	19	12	13	35
28	15	15	25	17	17	37	16	11	24	14	10	9	11	8	26	10	7	10	9	8	8	11	9	9	14	37
29	11	8	20	42	32	16	12	14	17	25	18	10	11	9	7	8	8	8	7	6	7	6	6	7	13	42
30	8	6	7	7	6	8	7	6	8	10	13	11	14	15	6	7	13	26	9	7	6	7	8	7	9	26
AV	10	9	12	13	14	14	13	12	15	17	16	13	14	13	12	10	9	9	9	12	12	10	10	12	12	
PK	22	24	31	42	50	37	41	31	37	51	43	27	33	35	35	19	14	26	32	41	35	25	19	36		51

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	15	8	7	10	11	5	2	0	7	37	36	17	12	13	12	16	7	2	11	8	22	14	7	5	12	37
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	7	9	13	11	9	8	4	5	7	6	5	7	12	8	13
3	16	10	21	9	26	14	19	23	22	21	54	20	37	28	35	18	7	3	2	12	12	23	17	20	20	54
4	22	24	15	34	18	18	18	12	25	9	15	16	25	24	16	8	5	4	21	10	37	25	21	18	18	37
5	14	15	11	9	9	12	6	10	21	9	7	9	8	9	10	8	6	3	6	24	23	22	32	30	13	32
6	10	7	19	29	17	14	9	14	36	8	8	9	8	8	7	7	6	9	30	36	15	23	13	36	16	36
7	24	11	20	8	43	22	5	6	20	18	25	11	9	12	10	15	8	3	5	5	7	6	10	7	13	43
8	5	8	7	14	10	13	18	11	9	11	14	11	11	10	10	10	5	5	4	7	6	10	16	5	10	18
9	5	4	4	4	5	20	3	7	6	9	11	12	15	11	10	10	9	17	20	15	14	4	2	15	10	20
10	7	4	5	2	6	6	13	15	18	12	11	9	16	8	9	7	8	11	4	9	4	4	12	(WR)	9	18
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	0	0	5	12	6	5	0	0	0	0	0	( )	12
12	0	0	0	0	0	0	0	0	3	4	7	11	8	8	7	6	4	2	4	5	6	20	12	14	5	20
13	6	21	40	34	28	22	41	25	35	28	10	7	8	7	8	9	8	8	8	7	11	13	9	4	17	41
14	4	17	9	6	4	10	17	8	14	22	19	30	26	35	19	13	17	6	2	4	3	3	4	4	12	35
15	4	6	5	6	9	8	11	27	33	38	20	8	9	8	7	9	4	3	5	7	13	16	22	13	12	38
16	17	22	16	14	13	12	7	6	4	11	20	8	9	10	10	9	10	23	17	23	14	14	33	27	15	33
17	23	12	11	6	5	8	9	11	6	16	9	8	8	9	6	9	6	21	20	7	2	2	2	2	9	23
18	3	4	5	6	2	4	7	6	9	24	14	16	10	13	14	15	9	12	17	8	10	15	7	12	10	24
19	12	9	10	11	14	12	9	7	8	8	14	8	10	23	16	12	11	9	3	4	3	5	4	5	9	23
20	(PF)	3	5	6	5	6	12	24	14	(CM)	11	9	13	10	8	10	7	9	5	5	5	5	3	5	8	24
21	2	3	3	2	2	2	2	2	7	8	7	9	9	15	13	11	9	10	7	15	50	18	15	6	9	50
22	4	3	4	6	7	7	7	6	6	8	7	8	8	8	7	9	8	9	16	11	8	10	24	10	8	24
23	12	24	15	7	7	19	17	28	6	23	36	17	11	11	(PF)	7	2	0	0	0	(WR)	(WR)	(WR)	(WR)	13	36
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	13	17	11	12	9	7	6	7	9	6	12	11	15	10	17	11	17
25	11	13	14	9	17	19	13	7	14	22	10	10	8	8	20	16	11	11	12	24	2	5	10	8	12	24
26	6	9	13	25	18	27	29	27	27	19	13	32	26	11	8	7	4	9	26	3	7	7	7	3	15	32
27	7	4	12	12	8	18	9	12	5	18	9	11	29	20	13	12	14	12	17	13	9	9	22	10	13	29
28	18	24	13	17	16	14	36	18	19	15	9	8	9	8	19	9	7	9	7	7	6	10	7	9	13	36
29	8	6	15	24	39	24	15	15	16	26	17	9	10	8	6	7	6	7	6	4	6	5	5	7	12	39
30	8	5	6	7	5	7	6	5	8	10	13	10	15	16	5	7	14	27	9	6	5	6	6	6	9	27
AV	10	10	11	12	13	13	13	12	15	17	16	12	13	12	11	10	8	9	10	10	11	11	12	11	12	
PK	24	24	40	34	43	27	41	28	36	38	54	32	37	35	35	18	17	27	30	36	50	25	33	36		54

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	1	0	-1	-1	-2	-1	-1	1	2	4	4	3	3	4	3	1	-1	-2	-2	-3	-2	-2	0	4
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-3	-2	-1	-1	-1	-1	-1	-2	-2	-3	-4	-5	-6	-6	( )	-1
3	-6	-6	-6	-6	-6	-6	-7	-6	-4	-1	1	2	2	3	4	4	3	2	0	-1	-1	-1	-1	-1	-2	4
4	-2	-2	-3	-4	-3	-3	-3	-2	0	3	7	9	11	12	12	9	7	3	2	1	1	0	1	-1	2	12
5	-1	1	-1	0	2	1	-1	2	3	8	9	9	9	10	12	11	8	4	3	1	1	1	1	1	4	12
6	2	3	1	2	1	1	2	2	6	9	10	11	12	12	12	11	9	6	5	4	4	4	4	4	6	12
7	3	3	4	4	3	3	3	3	7	9	11	11	9	9	11	12	10	7	5	4	5	6	6	7	7	12
8	7	7	6	4	4	4	5	5	6	8	9	10	11	9	8	7	2	2	2	2	2	1	1	2	5	11
9	2	2	1	2	1	2	2	3	3	6	7	7	9	8	8	6	5	3	2	2	0	2	2	1	4	9
10	1	0	0	0	-1	0	1	1	4	6	7	3	4	3	3	2	1	1	0	0	0	0	0	(WR)	1	7
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-2	-2	-1	-1	-4	-4	-3	-4	-6	-7	-8	( )	-1
12	-8	-7	-6	-7	-8	-8	-9	-8	-4	-2	1	4	4	4	3	2	-2	-5	-6	-7	-6	-5	-6	-6	-4	4
13	-4	-3	-2	-2	-2	-2	-2	-2	0	2	2	3	5	5	2	0	-3	-3	-5	-7	-7	-7	-7	-8	-2	5
14	-9	-11	-11	-11	-12	-12	-13	-12	-8	-4	-1	2	4	6	5	2	0	-4	-6	-8	-7	-7	-7	-7	-5	6
15	-7	-7	-7	-7	-7	-6	-7	-6	-2	1	3	3	6	7	7	6	2	-2	-3	-4	-6	-6	-6	-5	-2	7
16	-5	-6	-6	-6	-6	-6	-6	-5	-1	3	7	9	9	9	9	7	3	0	-1	-1	-1	-1	-1	0	0	9
17	1	-1	-2	-1	-2	-1	-2	-1	2	7	9	9	9	9	7	9	6	3	2	2	1	2	2	2	3	9
18	2	1	1	2	2	1	1	2	2	4	4	8	6	7	7	5	3	3	3	3	3	4	4	4	3	8
19	3	3	3	2	3	2	3	3	3	3	3	1	-1	1	1	1	0	-2	-3	-4	-4	-3	-4	-4	0	3
20	(PF)	-5	-5	-6	-6	-8	-8	-8	-5	-2	2	3	3	4	2	-1	-3	-3	-3	-4	-4	-4	-4	-4	-3	4
21	-4	-4	-6	-6	-7	-6	-6	-6	-3	-1	2	2	3	4	5	3	0	-2	-3	-3	-4	-4	-4	-3	-2	5
22	-3	-3	-2	-2	-2	-2	-2	-1	-1	1	1	1	1	-1	-3	-4	-5	-6	-6	-6	-7	-8	-8	-8	-3	1
23	-9	-11	-12	-13	-12	-12	-13	-13	-11	-6	-2	-1	-1	-2	(PF)	-2	-7	-9	-11	-12	(WR)	(WR)	(WR)	(WR)	-8	-1
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-5	-3	-1	1	1	-1	-2	-3	-4	-5	-4	-3	-3	-2	-2	( )	1
25	-2	-3	-4	-4	-3	-2	-2	-2	0	1	2	3	3	4	2	2	-1	-2	-2	-3	-4	-4	-4	-5	-1	4
26	-6	-8	-9	-8	-7	-7	-7	-7	-7	-5	-2	2	4	5	1	-1	-3	-5	-6	-7	-8	-9	-9	-9	-5	5
27	-9	-8	-9	-10	-10	-11	-10	-10	-8	-3	1	2	6	7	8	6	1	-2	-4	-5	-4	-4	-4	-4	-4	8
28	-4	-4	-5	-6	-5	-5	-6	-5	-2	0	3	4	6	3	2	2	1	1	1	1	1	0	0	-1	-1	6
29	-1	-1	0	-1	-1	-1	-1	-1	0	1	2	2	3	2	2	1	1	-1	-1	-2	-1	-1	-1	-1	0	3
30	-1	-1	-1	0	0	-1	0	-1	1	2	2	2	1	2	1	1	1	1	1	1	1	1	0	0	0	2
AV	-2	-3	-3	-3	-3	-3	-3	-3	-1	2	3	4	5	5	4	3	1	-1	-2	-2	-2	-2	-2	-2	0	
PK	7	7	6	4	4	4	5	5	7	9	11	11	12	12	12	12	10	7	5	4	5	6	6	7		12
MN	-9	-11	-12	-13	-12	-12	-13	-13	-11	-6	-3	-2	-1	-2	-3	-4	-7	-9	-11	-12	-8	-9	-9	-9		

MONTHLY MINIMUM = -13

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	1	0	0	-1	-1	-1	-1	0	1	3	3	3	3	3	2	1	1	-1	-2	-2	-2	-2	0	3
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-3	-2	-2	-2	-2	-1	-1	-2	-2	-3	-3	-3	-4	-5	( )	-1
3	-4	-5	-4	-5	-4	-4	-4	-4	-4	-1	1	1	2	3	3	4	3	2	1	0	0	1	0	-1	-1	4
4	-1	-1	-2	-2	-2	-2	-2	-2	1	3	5	7	8	9	9	8	7	4	3	2	2	2	2	2	2	9
5	1	2	1	2	3	2	2	2	4	7	7	8	8	9	9	9	8	6	4	3	3	3	3	3	4	9
6	3	4	2	3	2	3	3	3	5	8	7	8	10	10	11	10	9	7	6	5	5	4	4	4	6	11
7	4	4	3	2	1	1	4	4	4	8	9	9	9	9	9	11	10	8	6	5	6	7	7	5	6	11
8	2	6	6	3	6	6	5	6	6	7	9	9	9	9	8	7	3	2	2	2	2	2	2	2	5	9
9	3	2	2	2	2	2	3	3	3	4	5	6	7	7	7	6	3	4	2	3	1	3	3	2	3	7
10	1	1	1	1	1	1	1	2	3	4	5	2	3	3	3	2	2	1	1	1	1	1	0	(WR)	2	5
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-2	-2	-2	-2	-4	-3	-3	-3	-4	-5	-6	( )	-2
12	-7	-7	-6	-6	-7	-7	-8	-8	-4	-2	-1	2	2	1	1	0	-2	-4	-4	-5	-4	-4	-4	-4	-4	2
13	-3	-2	-2	-2	-1	-2	-2	-1	-1	2	2	2	3	3	2	-1	-3	-3	-5	-7	-7	-6	-6	-7	-2	3
14	-9	-11	-10	-10	-11	-11	-12	-12	-9	-6	-3	-1	2	3	3	1	-1	-3	-4	-6	-5	-6	-6	-6	-5	3
15	-6	-6	-6	-6	-6	-5	-6	-4	-2	1	2	3	4	4	4	3	2	-1	-2	-3	-4	-4	-4	-4	-2	4
16	-4	-4	-5	-6	-5	-5	-4	-4	-2	2	5	7	7	7	7	6	3	1	0	0	0	0	-2	1	0	7
17	1	0	-1	-1	-1	-1	-1	-2	1	4	7	7	8	7	6	7	6	3	1	2	3	2	-3	-7	2	8
18	-1	2	2	1	0	-1	-3	1	1	3	3	5	5	4	3	4	3	3	3	4	3	4	4	4	2	5
19	3	3	3	3	3	3	2	2	2	2	3	1	-2	0	1	0	-1	-1	-2	-3	-3	-2	-3	-2	0	3
20	(PF)	-3	-4	-5	-4	-6	-7	-7	-4	-2	0	1	1	2	1	-1	-3	-3	-4	-4	-4	-3	-3	-3	-3	2
21	-3	-3	-4	-5	-5	-5	-4	-4	-3	-2	0	1	1	2	2	2	0	-2	-2	-2	-3	-3	-3	-3	-2	2
22	-3	-2	-2	-2	-1	-1	-1	-1	-1	0	1	1	1	-1	-3	-4	-6	-6	-6	-6	-7	-7	-7	-7	-3	1
23	-8	-9	-11	-12	-12	-12	-12	-12	-11	-8	-3	-2	-3	-3	(PF)	-2	-7	-9	-10	-11	(WR)	(WR)	(WR)	(WR)	-8	-2
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-7	-5	-3	0	1	-1	-1	-3	-4	-4	-3	-3	-2	-1	-1	( )	1
25	-1	-2	-3	-3	-2	-2	-2	-1	0	1	1	3	3	3	2	1	-1	-2	-2	-3	-4	-4	-4	-5	-1	3
26	-6	-7	-9	-7	-7	-7	-7	-7	-7	-6	-4	-2	1	2	1	-1	-3	-4	-5	-6	-7	-8	-8	-8	-5	2
27	-9	-8	-8	-9	-9	-9	-9	-9	-8	-4	-1	1	3	4	5	4	1	-2	-3	-4	-4	-3	-3	-3	-4	5
28	-3	-3	-4	-5	-4	-4	-4	-4	-2	0	3	3	3	2	2	2	2	1	1	1	1	1	0	0	-1	3
29	-1	0	0	0	-1	-1	-1	-1	0	1	2	2	2	2	1	1	1	-1	-1	-1	-1	0	-1	-1	0	2
30	-1	-1	0	0	0	0	0	0	1	1	1	1	1	2	1	1	1	1	1	1	1	1	0	1	0	2
AV	-2	-2	-2	-3	-2	-2	-3	-2	-1	1	2	3	3	4	3	3	1	0	-1	-1	-1	-1	-2	-2	0	
PK	4	6	6	3	6	6	5	6	6	8	9	9	10	10	11	11	10	8	6	5	6	7	7	5		11
MN	-9	-11	-11	-12	-12	-12	-12	-12	-11	-8	-5	-3	-3	-3	-3	-4	-7	-9	-10	-11	-7	-8	-8	-8		

MONTHLY MINIMUM = -12

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	1	1	1	0	-1	-1	-1	-1	-1	0	2	4	3	3	3	4	2	1	0	-1	-2	-2	-2	-2	1	4
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-3	-3	-2	-2	-2	-1	-1	-2	-2	-3	-3	-3	-4	-4	( )	-1
3	-4	-4	-4	-4	-4	-4	-4	-4	-3	-2	0	1	2	3	3	4	3	2	1	0	0	1	0	-1	-1	4
4	-1	-1	-2	-2	-2	-2	-2	-1	1	3	5	6	8	8	9	8	7	4	3	2	2	2	2	2	2	9
5	2	2	2	3	3	2	2	3	4	7	8	8	8	9	9	9	8	6	5	3	3	3	3	3	5	9
6	3	4	3	3	3	3	3	4	7	8	9	10	11	11	11	10	8	7	6	5	6	5	5	5	6	11
7	4	5	6	5	4	4	4	5	6	8	9	9	9	9	10	11	10	8	6	6	6	7	7	8	7	11
8	8	7	6	6	6	6	6	6	6	8	9	9	10	9	8	7	2	2	2	2	2	2	2	2	5	10
9	3	2	2	2	2	2	3	3	3	4	6	6	7	7	7	6	4	4	3	3	2	3	3	2	4	7
10	1	1	1	1	1	1	1	2	3	4	6	3	3	3	2	2	1	1	1	1	1	2	1	(WR)	2	6
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-2	-2	-1	-2	-4	-3	-3	-3	-4	-5	-5	( )	-1
12	-6	-6	-5	-6	-7	-7	-7	-7	-3	-2	1	3	4	3	2	1	-2	-3	-4	-5	-4	-4	-4	-4	-3	4
13	-3	-2	-2	-1	-1	-1	-2	-1	0	2	2	3	3	4	1	-1	-3	-3	-6	-7	-7	-6	-7	-8	-2	4
14	-9	-11	-11	-10	-11	-11	-12	-12	-8	-3	1	2	4	6	4	3	-1	-3	-3	-5	-5	-5	-6	-6	-5	6
15	-5	-5	-5	-5	-5	-4	-5	-4	-1	2	2	3	6	6	6	4	2	-1	-2	-2	-3	-3	-4	-4	-1	6
16	-4	-4	-4	-4	-4	-5	-4	-3	0	3	7	8	7	8	7	6	3	1	0	1	0	1	1	1	1	8
17	2	1	0	0	0	1	0	1	3	6	8	8	9	8	6	8	6	3	2	2	3	4	3	3	4	9
18	3	3	3	3	2	2	1	2	3	4	4	6	6	6	6	4	3	3	3	3	3	4	4	4	3	6
19	3	3	3	2	3	2	3	3	3	3	3	1	-2	0	1	0	-1	-1	-2	-2	-2	-2	-3	-3	1	3
20	(PF)	-3	-3	-4	-4	-5	-6	-6	-3	-1	1	1	2	2	1	-1	-3	-4	-4	-4	-4	-3	-3	-3	-3	2
21	-3	-3	-4	-4	-4	-4	-4	-4	-3	-1	1	2	2	2	2	1	-1	-2	-2	-2	-3	-3	-3	-3	-2	2
22	-2	-2	-2	-2	-2	-2	-2	-1	-1	0	1	1	1	-1	-3	-4	-6	-6	-6	-7	-7	-7	-7	-7	-3	1
23	-8	-9	-11	-12	-12	-12	-12	-12	-10	-7	-2	0	-1	-2	(PF)	-2	-7	-9	-10	-11	(WR)	(WR)	(WR)	(WR)	-8	0
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-5	-3	-1	1	1	-1	-1	-3	-4	-4	-3	-2	-2	-1	-1	( )	1
25	-1	-2	-3	-3	-2	-2	-2	-1	0	1	2	3	3	3	2	1	-1	-2	-2	-3	-4	-4	-4	-5	-1	3
26	-6	-8	-9	-7	-7	-7	-7	-7	-7	-6	-2	-1	2	3	1	-1	-3	-5	-6	-7	-7	-8	-8	-8	-5	3
27	-9	-8	-8	-8	-9	-9	-9	-8	-7	-3	0	3	4	7	6	4	1	-2	-3	-4	-3	-3	-3	-3	-3	7
28	-3	-3	-4	-5	-3	-3	-3	-4	-1	1	3	3	4	2	2	2	1	1	1	1	1	0	0	-1	0	4
29	-1	-1	0	0	-1	-1	-1	-1	-1	1	2	2	2	2	1	1	1	-1	-1	-1	-1	-1	-1	-1	0	2
30	-1	-1	-1	0	0	-1	0	-1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	0	0	0	2
AV	-1	-2	-2	-2	-2	-2	-2	-2	0	1	3	4	4	4	4	3	1	0	-1	-1	-1	-1	-1	-1	0	
PK	8	7	6	6	6	6	6	6	7	8	9	10	11	11	11	11	10	8	6	6	6	7	7	8		11
MN	-9	-11	-11	-12	-12	-12	-12	-12	-10	-7	-3	-3	-2	-2	-3	-4	-7	-9	-10	-11	-7	-8	-8	-8		

MONTHLY MINIMUM = -12

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	-61	-61	-61	-56	-56	-56	-44	-28	-33	-67	-6	17	-56	-44	-39	-22	-67	-11	-6	6	11	-11	-11	-72	-35	17
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-94	-94	-89	-78	-94	-94	-72	-50	-33	11	11	78	106	89	-29	106
3	89	117	111	167	78	111	200	128	33	-78	-83	-83	-72	-72	-89	-94	-83	-33	50	39	44	44	22	44	25	200
4	50	117	94	111	106	89	44	106	61	-28	-78	-128	-111	-117	-100	-83	-50	28	94	111	128	111	94	172	34	172
5	189	72	150	200	72	117	167	144	78	-39	-56	-78	-78	-72	-94	-78	-44	44	83	122	144	161	150	144	63	200
6	128	89	89	44	167	94	83	117	67	-72	-72	-94	-89	-89	-89	-78	-44	17	33	11	56	28	56	50	21	167
7	44	78	56	33	50	28	44	133	0	-78	-122	-94	-67	-56	-61	-94	-44	11	61	44	50	39	33	-6	3	133
8	-22	-33	-22	44	28	28	50	11	-61	-67	-94	-94	-83	-78	-78	-72	-61	-56	-44	-44	-39	-28	11	-6	-34	50
9	-6	-11	-11	0	-11	-17	0	-17	-44	-72	-72	-94	-144	-122	-83	-78	-44	0	0	72	133	89	50	39	-19	133
10	-33	33	28	6	50	-6	-28	-17	-22	-72	-89	-72	-61	-78	-67	-72	-72	-56	-28	-22	50	72	17	(WR)	-23	72
11	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	-72	-67	-39	-78	-33	-28	-11	-22	6	89	167	( )	167
12	183	106	22	28	106	111	139	56	117	39	94	128	100	117	-72	-17	0	72	72	94	106	44	72	89	75	183
13	44	78	28	39	61	39	17	-11	17	-28	-56	-33	-122	-106	-94	-89	-89	-50	-83	-44	-39	-22	-56	-56	-27	78
14	-61	-78	-61	-11	17	-6	0	44	83	100	167	67	61	156	72	83	-6	56	167	194	133	117	100	133	64	194
15	150	139	117	128	94	72	144	172	106	89	-78	-44	-33	0	-50	-50	-22	50	94	122	189	161	106	50	71	189
16	78	133	111	111	61	50	106	111	167	67	139	28	-94	6	-72	-28	-17	28	61	100	56	78	156	67	63	167
17	39	67	72	39	100	94	111	94	128	-44	-56	-67	-28	-11	-44	-67	-33	-11	28	44	144	150	133	100	41	150
18	83	106	117	11	6	-17	-17	-17	-11	-33	-72	-106	-44	-89	-156	-89	-56	-44	-33	-50	-44	-50	-50	-50	-29	117
19	-67	-61	-61	-39	-33	-50	-67	-78	-61	-72	-117	-22	17	-56	-128	-50	-39	50	106	94	78	39	94	111	-17	111
20	(PF)	122	78	100	117	217	161	133	128	83	-50	-83	-61	-67	-100	-89	-89	-78	-67	-61	-50	11	89	44	21	217
21	67	78	117	144	144	128	133	144	44	-17	6	-50	-33	-122	-322	-133	-56	11	50	83	67	44	44	17	25	144
22	39	28	6	-22	-39	-39	-44	-50	-67	-72	-72	-83	-83	-83	-78	-83	-83	-83	-78	-72	-78	-44	6	-33	-50	39
23	-11	6	67	6	-17	22	78	44	56	22	11	106	78	89	(PF)	-11	-89	-56	11	-28	(WR)	(WR)	9445	(WR)	20	106
24	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	(WR)	39	122	122	89	72	22	0	-39	-28	-22	11	61	44	22	-11	34	122
25	-6	-22	44	61	-11	0	-6	-28	-6	0	-56	-56	-89	-133	-72	-44	-61	-72	-56	-44	-44	11	-44	-78	-34	61
26	-83	-94	-56	-22	-28	-56	-72	-78	-78	-33	56	-56	-22	44	-56	-72	-83	-50	-22	-56	44	0	78	67	-30	78
27	-11	-56	78	78	50	128	78	100	156	28	56	-144	-28	156	56	17	22	-6	-6	0	0	50	56	28	37	156
28	44	61	17	17	61	117	128	61	83	67	-56	-44	-94	-72	-78	-72	-61	-56	-61	-56	-56	-56	-61	-44	-9	128
29	-17	-33	-44	-33	-33	-50	-39	-44	-67	-67	-89	-117	-83	-78	-83	-67	-72	-50	-44	-11	-33	-33	-28	-56	-53	-11
30	-56	-56	-56	-67	-50	-56	-56	-50	-67	-83	-72	-61	-39	-44	-28	-39	-39	-33	-50	-67	-56	-33	-61	-44	-53	-28
AV	31	34	38	41	40	41	49	44	30	-17	-31	-46	-47	-37	-74	-57	-52	-16	8	20	36	38	44	34	5	
PK	189	139	150	200	167	217	200	172	167	100	167	128	100	156	72	83	22	72	167	194	189	161	156	172		217
MN	-83	-94	-61	-67	-56	-56	-72	-78	-78	-83	-122	-144	-144	-133	-322	-133	-89	-83	-83	-72	-78	-56	-61	-78		

MONTHLY MINIMUM = -322

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	98	98	98	98	98	98	98	98	98	98	98	56	43	45	44	42	47	62	73	79	84	88	91	94	80	98
2	95	95	95	95	95	96	96	95	95	86	84	76	68	67	65	59	43	47	58	76	84	85	85	85	80	96
3	83	83	83	83	83	82	83	85	76	49	30	20	20	20	21	21	30	46	53	61	65	62	51	53	56	85
4	53	54	51	55	59	59	55	59	52	38	23	20	20	20	20	22	29	38	44	47	42	42	42	42	41	59
5	42	41	45	46	38	39	43	43	40	22	21	21	21	21	21	20	21	27	29	34	35	35	35	35	32	46
6	35	32	38	37	42	42	39	38	28	21	20	20	19	18	18	18	18	24	24	28	30	30	30	31	28	42
7	31	32	32	32	32	31	32	33	30	23	21	20	20	20	20	19	18	19	24	28	32	32	28	27	27	33
8	20	20	32	45	56	58	57	55	57	54	40	34	30	26	30	36	89	90	93	93	94	94	94	94	58	94
9	94	94	94	94	94	94	94	93	92	72	62	62	45	39	39	45	67	50	50	58	70	70	70	76	72	94
10	91	92	92	92	95	98	98	98	70	65	56	85	91	86	86	91	93	96	97	98	98	98	98	98	90	98
11	98	98	98	98	98	98	98	98	98	98	97	97	90	86	86	86	86	86	87	90	91	86	83	83	92	98
12	84	87	87	86	86	86	86	85	78	63	60	51	45	40	41	44	56	71	75	71	70	72	76	77	70	87
13	76	63	63	57	51	55	55	53	56	49	50	50	47	45	64	60	81	77	93	93	94	94	94	94	67	94
14	95	95	95	95	95	94	93	93	90	74	61	42	30	27	26	26	26	45	63	74	68	63	63	64	67	95
15	66	69	71	71	71	70	70	69	70	61	55	33	33	32	32	32	32	39	51	57	62	67	68	69	56	71
16	70	73	77	79	80	81	81	81	65	51	46	30	28	28	28	28	30	40	47	53	54	54	54	54	55	81
17	52	52	55	58	60	63	63	63	56	44	35	35	35	35	38	38	38	44	51	60	64	72	68	66	52	72
18	70	69	73	72	80	89	91	91	91	78	77	63	65	70	68	69	75	79	81	76	74	73	72	72	76	91
19	79	81	85	94	90	91	84	83	85	86	85	100	100	100	68	78	76	81	86	90	90	90	91	92	87	100
20	93	93	93	93	93	93	93	95	94	73	59	52	51	46	43	87	97	97	98	98	98	98	97	96	85	98
21	96	96	96	96	96	95	93	91	81	69	63	57	53	50	48	50	59	66	75	77	79	87	87	88	77	96
22	88	88	87	84	82	81	80	80	79	77	72	67	62	70	92	94	94	95	97	99	100	99	99	100	86	100
23	99	99	98	99	99	99	99	99	99	99	84	65	57	62	57	57	66	87	92	98	98	99	99	99	88	99
24	99	99	99	98	98	98	99	98	98	87	66	57	46	42	43	45	60	67	72	81	84	84	84	83	79	99
25	79	76	78	87	86	83	81	81	72	68	61	57	57	54	81	77	91	91	94	97	99	100	100	100	81	100
26	100	97	97	98	98	98	98	98	98	87	70	56	46	42	40	46	57	73	84	89	94	94	94	95	81	100
27	95	95	95	95	95	95	95	95	77	60	49	41	35	32	32	32	35	51	60	76	78	63	64	64	67	95
28	63	65	68	70	70	74	75	76	72	60	46	44	40	48	54	54	57	60	62	63	63	64	64	66	62	76
29	70	70	71	71	72	73	74	77	78	79	79	73	70	70	77	95	86	82	80	82	82	79	79	90	77	95
30	84	83	83	83	83	87	87	92	92	87	84	95	100	100	100	100	100	100	100	100	99	99	99	99	93	100
AV	77	76	78	79	79	80	80	80	76	66	58	53	49	48	49	52	59	64	70	74	76	76	75	76	69	
PK	100	99	99	99	99	99	99	99	99	99	98	100	100	100	100	100	100	100	100	100	100	100	100	100		100
MN	20	20	32	32	32	31	32	33	28	21	20	20	19	18	18	18	18	19	24	28	30	30	28	27		

MONTHLY MINIMUM = 18

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	1	1	1	1	1	1	1	4	11	16	28	46	23	22	17	16	5	1	1	1	1	1	1	1	203	46
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	22	19	34	25	20	16	8	1	1	1	1	1	1	1	150	34
3	1	1	1	1	1	1	1	9	23	35	35	46	47	41	34	25	8	1	1	1	1	1	1	1	320	47
4	1	1	1	1	1	1	1	7	14	26	36	41	47	41	32	19	7	1	1	1	1	1	1	1	283	47
5	1	1	1	1	1	1	1	7	18	31	35	30	32	33	32	19	6	1	1	1	1	1	1	1	254	35
6	1	1	1	1	1	1	1	7	20	33	42	47	47	41	32	17	5	1	1	1	1	1	1	1	301	47
7	1	1	1	1	1	1	1	7	20	32	41	29	15	14	16	22	6	1	1	1	1	1	1	1	214	41
8	1	1	1	1	1	1	1	2	7	20	23	23	28	19	13	7	2	1	1	1	1	1	1	1	159	28
9	1	1	1	1	1	1	1	3	15	30	37	40	42	35	29	11	5	1	1	1	1	1	1	1	262	42
10	1	1	1	1	1	1	1	7	20	34	41	18	28	11	7	5	2	1	1	1	1	1	1	1	188	41
11	1	1	1	1	1	1	1	3	7	11	13	17	21	16	14	13	6	1	1	1	1	1	1	1	138	21
12	1	1	1	1	1	1	1	6	14	29	37	37	50	46	34	19	5	1	1	1	1	1	1	1	293	50
13	1	1	1	1	1	1	1	4	14	21	19	36	44	38	15	7	3	1	1	1	1	1	1	1	218	44
14	1	1	1	1	1	1	1	10	22	31	34	33	47	44	30	17	5	1	1	1	1	1	1	1	288	47
15	1	1	1	1	1	1	1	5	14	25	22	24	45	42	32	20	5	1	1	1	1	1	1	1	250	45
16	1	1	1	1	1	1	1	5	17	29	38	43	44	39	29	14	4	1	1	1	1	1	1	1	278	44
17	1	1	1	1	1	1	1	5	16	28	38	43	42	29	13	17	4	1	1	1	1	1	1	1	250	43
18	1	1	1	1	1	1	1	2	8	12	11	34	26	38	32	14	4	1	1	1	1	1	1	1	198	38
19	1	1	1	1	1	1	1	2	11	17	19	8	7	19	14	8	3	1	1	1	1	1	1	1	123	19
20	(PF)	1	1	1	1	1	1	7	21	34	41	43	39	47	12	4	2	1	1	1	1	1	1	1	263	47
21	1	1	1	1	1	1	1	3	7	13	31	32	36	42	37	16	4	1	1	1	1	1	1	1	234	42
22	1	1	1	1	1	1	1	3	7	13	13	13	10	8	8	5	2	1	1	1	1	1	1	1	100	13
23	1	1	1	1	1	1	1	3	11	23	30	33	34	29	(PF)	15	4	1	1	1	1	1	1	1	197	34
24	1	1	1	1	1	1	1	4	13	31	32	43	44	38	25	14	3	1	1	1	1	1	1	1	263	44
25	1	1	1	1	1	1	1	2	11	14	14	22	18	25	11	8	2	1	1	1	1	1	1	1	143	25
26	1	1	1	1	1	1	1	2	6	23	35	38	52	44	28	15	4	1	1	1	1	1	1	1	262	52
27	1	1	1	1	1	1	1	5	22	38	49	50	43	37	26	14	4	1	1	1	1	1	1	1	302	50
28	1	1	1	1	1	1	1	3	10	14	19	22	34	16	7	5	2	1	1	1	1	1	1	1	148	34
29	1	1	1	1	1	1	1	2	5	8	13	10	16	11	9	5	5	1	1	1	1	1	1	1	100	16
30	1	1	1	1	1	1	1	2	8	17	11	16	16	23	8	4	2	1	1	1	1	1	1	1	124	23
TL	32	31	31	33	33	32	35	130	393	692	860	935	1009	911	617	390	125	28	28	28	33	32	33	34	6506	
PK	1	1	1	1	1	1	1	10	23	38	49	50	52	47	37	25	8	1	1	1	1	1	1	1		52

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	790	789	790	790	790	790	791	791	791	791	794	794	794	793	791	789	789	790	790	790	790	790	791	791	791	794
2	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	794	794	794	794	793	794	795	796	796	796	796	797	796	797	795	797
3	797	797	796	796	797	797	797	797	797	797	796	795	794	793	793	793	793	794	794	795	795	795	795	795	795	797
4	795	794	794	795	794	794	794	795	795	793	793	793	791	791	790	791	791	792	792	792	792	793	792	792	793	795
5	792	792	792	792	792	792	792	792	792	791	790	791	790	790	789	790	790	791	792	791	791	792	791	792	791	792
6	792	791	791	791	791	790	790	790	790	789	788	788	787	786	785	786	786	787	788	787	787	788	788	788	789	792
7	787	787	787	787	787	787	787	788	788	787	786	786	785	785	784	786	785	785	786	786	786	786	786	786	786	788
8	786	786	786	786	786	786	786	786	786	786	786	785	783	783	783	783	785	785	785	785	785	785	785	785	785	786
9	785	785	784	785	784	785	785	785	786	785	785	785	785	785	786	786	788	789	789	788	789	789	789	790	786	790
10	789	788	789	789	789	789	788	788	789	788	787	786	785	785	786	785	785	784	783	783	782	781	781	781	786	789
11	781	780	780	779	779	780	781	782	783	783	785	785	786	786	787	787	789	790	790	791	791	792	791	792	785	792
12	793	794	795	795	795	796	796	796	797	797	796	796	794	794	794	794	794	796	795	794	794	794	793	792	795	797
13	791	790	789	788	788	787	787	787	787	787	786	786	786	785	786	787	789	791	791	793	793	794	793	795	789	795
14	796	796	796	797	797	797	798	798	799	798	798	796	795	794	794	793	794	795	795	795	796	795	794	794	796	799
15	795	793	793	793	793	793	793	792	792	791	791	790	789	789	789	788	789	790	790	790	790	790	791	792	791	795
16	791	790	790	790	790	790	791	791	791	788	788	787	786	786	786	786	786	787	787	787	788	787	787	787	788	791
17	788	787	787	787	787	786	787	787	787	787	785	785	784	784	784	784	784	785	785	784	785	785	785	785	786	788
18	785	785	785	784	784	784	784	785	785	785	784	783	782	782	782	782	782	782	782	781	781	782	781	780	783	785
19	780	780	779	779	779	778	778	778	777	778	778	780	780	781	781	782	782	783	783	784	784	784	784	785	781	785
20	(PF)	785	784	784	785	785	785	785	785	785	785	785	785	784	785	785	785	786	786	786	786	787	786	787	785	787
21	787	787	787	787	787	788	788	788	788	789	788	788	787	787	786	786	786	787	786	786	787	786	786	786	787	789
22	786	786	786	785	785	785	785	785	785	786	789	790	790	790	790	789	787	788	789	790	791	791	790	791	788	791
23	792	790	792	792	793	793	793	794	794	797	797	797	797	796	(PF)	799	792	793	794	794	795	795	794	793	794	799
24	793	792	793	793	793	793	793	793	792	792	791	792	791	791	791	791	792	793	793	793	793	793	792	792	792	793
25	792	792	791	792	792	792	792	792	792	792	792	791	791	790	790	791	792	793	794	793	794	795	795	796	792	796
26	796	796	796	797	797	796	796	797	797	797	797	795	794	793	792	793	793	795	795	796	796	795	795	795	795	797
27	795	794	794	793	793	793	792	792	792	792	792	789	788	788	787	787	787	787	788	789	789	788	788	788	790	795
28	788	788	787	788	788	788	788	788	788	787	787	786	786	785	785	785	785	786	785	785	785	785	785	785	786	788
29	785	784	785	784	783	784	783	783	782	785	785	785	784	782	778	779	782	782	782	783	782	783	782	782	783	785
30	782	781	781	781	780	780	779	779	780	780	779	778	777	776	775	771	771	772	771	771	770	771	771	770	776	782
AV	790	789	789	789	789	789	789	789	789	789	789	789	788	788	787	787	788	788	789	789	789	789	789	789	789	
PK	797	797	796	797	797	797	798	798	799	798	798	797	797	796	794	799	795	796	796	796	796	797	796	797		799
MN	780	780	779	779	779	778	778	778	777	778	778	778	777	776	775	771	771	772	771	771	770	771	771	770		

MONTHLY MINIMUM = 770

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1																									( )	
2			5							3				5											13	5
3									3																3	3
4																									( )	
5																							(TR)		( )	
6																									( )	
7																									( )	
8																									( )	
9																									( )	
10							3					5	5	5	3	5	8	10	13					23	79	23
11	13	3	5	3	5	13	8	5	5	3	5	3	3	3	3										76	13
12													5												5	5
13																			3						3	3
14									3																3	3
15																									( )	
16																									( )	
17																									( )	
18																			3	(TR)	(TR)				3	3
19					3	3						13	8												25	13
20																	3		10	3	3				18	10
21									(TR)	(TR)			3	5											8	5
22																		8	8	3	3				20	8
23																									( )	
24																									( )	
25																	3	5							8	5
26																									( )	
27																									( )	
28				3		8																			10	8
29																									( )	
30													5	5	3		3	3	8	3	3	13	8	3	53	13
TL	13	3	10	5	8	23	10	5	10	5	5	20	28	23	8	5	15	25	43	8	8	13	8	25	325	
PK	13	3	5	3	5	13	8	5	5	3	5	13	8	5	3	5	8	10	13	3	3	13	8	23		23

PRECIPITATION
CM*100

CB TRACT
MRI AD28
NOV 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1											3														3
2													8												8
3																									
4																									
5																									
6																									
7																									
8										5							3								8
9																									
10						3	3						5	8	8	10	13	15						23	86
11	13	8	5		8	15	5	10	10	3	10	3		3	3	5									99
12									3																3
13																	3		5						8
14																			3						3
15							3																		3
16																									
17																									
18																									
19													8	5											13
20																	5		10	3	3				20
21																									
22															3	3	8	5	5	3					25
23										3															3
24																									
25															3	3	3	3							10
26																	3								3
27																									
28																									
29																									
30											3		5	3	5	3	5	3	5	10		8	13	3	63
TL	13	8	5		8	18	10	10	13	10	15	3	25	18	20	23	41	25	28	15	3	8	13	25	356

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
NOV 1982
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	D	D	D	D	D	( )	( )	D	D	E	E	D	D	D	E	D	E	E	E	E	E	E	D	D
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	B	B	C	B	B	D	D	D	E	E	F	F	F	( )
3	F	F	( )	F	F	F	F	F	E	C	( )	C	D	D	B	B	C	D	E	( )	E	E	E	E	E
4	E	F	F	F	F	F	E	F	E	D	C	A	A	A	B	C	D	E	F	F	F	F	F	F	E
5	F	E	F	F	E	F	F	F	F	D	D	C	C	D	B	C	D	E	E	F	F	F	F	F	E
6	F	F	F	E	F	F	F	F	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
7	E	F	E	E	E	E	E	F	E	C	B	B	D	D	D	B	D	E	E	E	E	E	E	D	D
8	D	D	E	E	E	E	E	E	D	D	B	C	C	D	D	D	D	D	D	D	D	D	E	E	D
9	E	E	E	E	E	E	E	E	D	D	D	B	B	C	C	C	D	E	E	E	F	F	E	E	D
10	D	E	E	E	E	E	D	E	E	D	C	D	D	C	D	D	D	D	D	E	E	E	E	( )	D
11	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	( )	D	D	E	E	E	F	F	( )
12	F	F	E	E	F	F	F	E	F	E	E	F	F	F	D	E	E	E	E	F	F	E	E	F	E
13	E	F	E	E	E	E	E	E	E	( )	D	D	D	C	B	C	B	D	C	D	D	E	D	D	D
14	D	C	D	E	E	E	E	E	F	F	F	E	E	F	E	F	E	E	F	F	E	E	F	F	E
15	F	F	F	F	F	E	F	F	F	F	C	D	D	E	D	D	E	E	F	F	F	F	F	E	E
16	F	F	F	F	E	E	F	F	F	E	F	E	B	E	D	D	E	E	E	F	E	F	F	E	E
17	E	E	E	E	F	E	F	F	F	D	D	D	D	E	D	D	D	E	E	E	F	F	F	F	E
18	F	F	F	E	E	E	E	E	E	D	D	B	D	B	B	B	D	D	D	D	D	D	D	D	D
19	D	D	D	D	D	D	D	D	D	D	B	D	E	D	B	D	D	E	E	F	F	E	F	F	D
20	( )	F	F	F	F	F	F	F	F	F	D	C	D	D	B	B	B	C	D	D	D	E	F	E	E
21	E	F	F	F	F	E	E	E	E	E	E	D	D	B	B	B	D	E	E	F	E	E	E	E	E
22	E	E	E	E	D	D	D	D	D	D	D	C	C	C	C	C	C	C	C	D	C	D	E	D	D
23	E	E	E	E	E	E	F	E	E	E	E	F	F	F	( )	E	B	D	E	D	( )	( )	( )	( )	E
24	( )	( )	( )	( )	( )	( )	( )	( )	( )	E	F	F	F	E	E	E	D	D	E	E	E	E	E	E	( )
25	E	E	E	E	E	E	E	D	E	E	D	D	B	B	D	D	D	D	D	D	D	E	D	C	D
26	C	B	D	E	( )	D	D	C	C	D	E	D	E	E	D	D	C	D	E	D	E	E	F	E	D
27	E	D	F	F	E	F	F	F	F	( )	E	A	D	F	E	E	E	E	( )	E	E	E	E	E	E
28	E	E	E	E	E	F	F	E	F	E	D	D	B	D	C	D	D	D	D	D	D	D	D	D	D
29	E	D	D	D	D	D	D	D	D	D	B	B	C	C	C	D	D	D	D	E	D	D	D	D	D
30	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
AVE	E	E	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	D	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 4 B= 37 C= 43 D=216 E=229 F=142 HOURS MISSING= 49

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(11/01/82 TO 11/30/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	0	0	0	1	1	0	1	0	1	0	1	0	0	0	1	1	0	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 5. :	17	7	11	15	31	54	61	58	82	112	53	21	18	25	19	17	10 :	611
TOTAL :	17	7	11	15	31	54	61	58	82	112	53	21	18	25	19	17	10	611
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(11/01/82 TO 11/30/82)

WIND DIRECTION

CONCENTRATION MAX UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	1	3	3	7	5	5	5	5	5	7	1	1	3	5	7	1	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	3	1	1	2	2	2	2	0	0	0	1	2	0 :	16
LT 5. :	17	7	11	15	28	53	60	56	80	110	51	21	18	25	18	15	10 :	595
TOTAL :	17	7	11	15	31	54	61	58	82	112	53	21	18	25	19	17	10	611
MEAN CONC.	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(11/01/82 TO 11/30/82)

ONCENTRATION MAX UG/M**3	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	1	3	3	7	5	3	5	5	5	5	1	1	3	5	5	1	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 10. :	0	0	0	0	3	1	0	2	2	2	2	0	0	0	1	2	0 :	15
LT 5. :	17	7	11	15	28	53	61	56	80	110	51	21	18	25	18	15	10 :	596
TOTAL :	17	7	11	15	31	54	61	58	82	112	53	21	18	25	19	17	10	611
MEAN CONC.	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1

0 = NO OBSERVATIONS

(12/17/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(11/01/82 TO 11/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	76	78	72	72	80	82	80	82	86	88	88	80	78	78	76	78	72	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	1	5	2	1	6	19	7	1	0	0	0	0	0 :	42
70. - 80. :	6	3	4	1	9	12	13	17	15	22	17	4	4	8	8	3	2 :	148
60. - 70. :	4	1	3	7	16	27	27	26	39	68	19	5	7	11	8	13	2 :	283
50. - 60. :	6	2	3	8	6	4	15	13	23	17	16	8	3	4	4	3	3 :	138
40. - 50. :	0	1	2	0	1	3	2	5	8	3	4	2	2	3	1	0	1 :	38
30. - 40. :	0	0	0	0	1	3	4	1	3	0	0	1	2	2	0	0	1 :	18
20. - 30. :	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	1 :	7
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	16	7	12	17	36	57	63	63	94	129	63	21	18	28	21	19	10	674
MEAN CONC.	65	62	59	59	62	63	62	64	62	67	66	61	60	62	65	65	54	64

0 = NO OBSERVATIONS

```
                NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

     CARBON MONOXIDE (CO)
                                                                                CATHEDRAL BLUFFS SHALE OIL
                           TRAILER   AB23      PERIOD(11/01/82 TO 11/30/82)
                                                          WIND DIRECTION
 CONCENTRATION    N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
      MAX       114   114    0  114  114    0  114  114  114  114  114  114  114  114  114  114  114
   UG/M**3
               ...........................................................................................
   GT  650. :     0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 600. - 650. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 550. - 600. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 500. - 550. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 450. - 500. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 400. - 450. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 350. - 400. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 300. - 350. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 250. - 300. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 200. - 250. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 150. - 200. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
 100. - 150. :    5     2    0    1    2    0    2    2    3    9    7    2    4    1    5    2    1 :    48
  50. - 100. :    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0
   LT   50. :    12     4   12   16   34   58   61   62   89  116   56   19   14   27   16   17    9 :   622
    TOTAL    :   17     6   12   17   36   58   63   64   92  125   63   21   18   28   21   19   10      670
               ...........................................................................................
    MEAN         33    38    0    6    6    0    3    3    3    8   12   10   25    4   27   12   11        8
    CONC.

               0 = NO OBSERVATIONS
```

(12/17/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(11/01/82 TO 11/30/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	2	2	7	2	5	2	7	5	10	13	5	5	5	7	7	5	
GT 13. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
12. - 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11. :	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0 :	2
9. - 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 9. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
7. - 8. :	1	0	0	1	0	0	0	1	0	2	2	0	0	0	1	1	0 :	9
6. - 7. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 6. :	1	0	0	2	0	3	0	2	3	21	3	2	2	4	2	3	1 :	49
4. - 5. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	5	3	5	1	10	7	8	13	30	51	18	7	4	7	5	4	1 :	179
1. - 2. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1. :	9	3	7	12	26	47	56	48	61	55	36	12	12	13	11	8	8 :	424
TOTAL :	16	6	12	16	36	57	64	64	94	130	61	21	18	24	19	16	10	664
MEAN CONC.	1	1	1	1	0	0	0	0	1	2	1	1	1	1	1	2	0	1

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(11/01/82 TO 11/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	6	1	5	5	2	8	8	6	8	9	9	5	5	5	5	6	1	
GT 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
12. - 13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
11. - 12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
9. - 10. :	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0 :	3
8. - 9. :	0	0	0	0	0	1	1	0	2	8	1	0	0	0	0	0	0 :	13
7. - 8. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
6. - 7. :	1	0	0	0	0	0	1	1	3	11	1	0	0	0	0	1	0 :	19
5. - 6. :	0	0	1	3	0	1	0	0	2	3	1	3	4	1	1	0	0 :	20
4. - 5. :	0	0	0	0	0	1	0	1	4	8	4	0	0	0	0	1	0 :	19
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	2	0	2	1	3	4	12	8	18	25	7	3	2	1	0	0	0 :	88
1. - 2. :	2	1	2	0	1	9	8	6	8	9	3	1	1	1	3	0	1 :	56
LT 1. :	11	5	7	12	32	41	42	48	57	64	43	14	11	21	15	14	9 :	446
TOTAL :	16	6	12	16	36	57	64	64	94	130	61	21	18	24	19	16	10	664
MEAN CONC.	0	0	1	1	0	0	0	0	1	2	1	1	1	0	0	0	0	1

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(11/01/82 TO 11/30/82)

WIND SPEED METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	1	1	1	2	4	5	4	6	10	8	8	6	5	4	4	3	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	3	2	1	0	0	0	0	0	0 :	6
5. - 8. :	0	0	0	0	0	1	0	3	14	18	5	1	1	0	0	0	0 :	43
3. - 5. :	0	0	0	0	2	2	4	18	26	64	27	0	1	3	7	1	0 :	155
1. - 3. :	7	1	3	7	28	44	46	30	38	34	17	9	5	18	10	8	0 :	305
LT 1. :	10	6	9	10	6	11	14	14	13	12	14	11	11	7	4	10	0 :	162
TOTAL :	17	7	12	17	36	58	64	65	94	130	64	21	18	28	21	19	0	671
PERCENT	3.	1.	2.	3.	5.	9.	10.	10.	14.	19.	10.	3.	3.	4.	3.	3.	0.	100.

0 = NO OBSERVATIONS

(12/17/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(11/01/82 TO 11/30/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	2	2	1	2	7	5	6	8	12	14	11	8	5	8	7	4	0	
GT 11. :	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0 :	5
8. - 11. :	0	0	0	0	0	0	0	2	9	15	5	1	0	1	0	0	0 :	33
5. - 8. :	0	0	0	0	3	2	2	6	18	46	24	0	1	1	2	0	0 :	105
3. - 5. :	0	0	0	0	3	8	26	23	36	43	19	4	0	8	8	6	0 :	184
1. - 3. :	7	4	1	8	16	27	40	25	22	13	15	18	14	19	8	8	0 :	245
LT 1. :	3	5	5	4	9	6	10	9	6	5	7	12	6	4	9	5	0 :	105
TOTAL :	10	9	6	12	31	43	78	65	92	124	72	35	21	33	27	19	0	677
PERCENT	1.	1.	1.	2.	5.	6.	12.	10.	14.	18.	11.	5.	3.	5.	4.	3.	0.	100.

0 = NO OBSERVATIONS

(12/17/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(11/01/82 TO 11/30/82)

WIND SPEED METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR		TOTAL
MAX		4	2	9	1	7	8	7	9	14	16	12	9	6	9	8	5	0		
GT 11.	:	0	0	0	0	0	0	0	0	3	9	3	0	0	0	0	0	0	:	15
8. - 11.	:	0	0	1	0	0	1	0	4	13	19	7	1	0	2	1	0	0	:	49
5. - 8.	:	0	0	0	0	1	3	7	7	25	64	37	1	1	0	2	1	0	:	149
3. - 5.	:	1	0	0	0	0	12	21	36	25	38	29	2	0	3	9	9	0	:	185
1. - 3.	:	8	9	5	1	9	14	20	20	35	25	11	14	12	17	16	11	0	:	227
LT 1.	:	5	1	1	2	4	2	5	3	5	3	5	5	4	6	4	0	0	:	55
TOTAL	:	14	10	7	3	14	32	53	70	106	158	92	23	17	28	32	21	0		680
PERCENT		2.	1.	1.	0.	2.	5.	8.	10.	16.	23.	14.	3.	2.	4.	5.	3.	0.		100.

0 = NO OBSERVATIONS

```
FIVE MAXIMUM SLIDING AVERAGE                                              C-B TRACT
UG/M**3                                                                   SITE AB23
                                                                          NOV  1982
                                                                          CATHEDRAL BLUFFS SHALE OIL CO.

      COMPONENT      AVG. TIME        RANK       DAY      HOUR(BEG)     VALUE
        SO2             3 HR
                                        1         17         11          11.3
                                        2         24         10           7.9
                                        3          5         13           7.0
                                        4          5         16           6.1
                                        5          7         11           6.1
        SO2            24 HR
                                        1         23         17           4.6
                                        2          5          6           3.8
                                        3         20          6           2.6
                                        4          6         22           2.5
                                        5         16         20           2.5
        CO              1 HR
                                        1          1         11         100.0
                                        2          1         12         100.0
                                        3          1         13         100.0
                                        4          1         14         100.0
                                        5          1         15         100.0
        CO              8 HR
                                        1         11         11         100.0
                                        2         24          3         100.0
                                        3          1          9         100.0
                                        4          9         13         100.0
                                        5         21          2         100.0
        O3              1 HR
                                        1          7         15          88.3
                                        2          7         16          88.3
                                        3          6         16          86.3
                                        4          7         14          86.3
                                        5          7         17          86.3
        PART           24 HR
                                        1         15          1           6.9
                                        2         23          1           5.3
                                        3          3          1           4.6
                                        4          7          1           4.2
                                        5         27          1           3.1
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

NOVEMBER 1982

GASEOUS PARAMETERS	
NOX:	90 %
NO:	90
NO2:	90
O3:	98
CO:	97
SO2:	98
H2S:	98

__PARTICULATES__: 100 %

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	95 %
30 M:	95
60 M:	95
WIND DIRECTION	
10 M:	95
30 M:	95
60 M:	95
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	95
30 M:	95
60 M:	95
TEMPERATURE	
10 M:	95
30 M:	95
60 M:	95
DELTA TEMPERATURE:	95
RELATIVE HUMIDITY:	100
SOLAR RADIATION:	98
BAROMETRIC PRESSURE:	98
PRECIPITATION:	100

DECEMBER

LIST OF TABLES

Page

DIURNAL VARIATION OF GASEOUS AND PARTICULATE MATTER

Nitric Oxide (NO) at Station AB23 . . . . II-529
Oxides of Nitrogen (NO_x) at Station AB23 . . . . II-530
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-531
Ozone (O_3) at Station AB23 . . . . II-532
Carbon Monoxide (CO) at Station AB23 . . . . II-533
Sulfur Dioxide (SO_2) at Station AB23 . . . . II-534
Hydrogen Sulfide (H_2S) at Station AB23 . . . . II-535
Particulates Daily Average at Stations AB23 . . . . II-536

DIURNAL VARIATION OF METEOROLOGICAL PARAMETERS

Wind Speed at Station AA23 - 10 Meter Level II-537
Wind Speed at Station AA23 - 30 Meter Level II-538
Wind Speed at Station AA23 - 60 Meter Level II-539
Wind Direction at Station AA23 - 10 Meter Level II-540
Wind Direction at Station AA23 - 30 Meter Level II-541
Wind Direction at Station AA23 - 60 Meter Level II-542
Wind Direction and Vector Average at Station AA23 - 10 Meter Level II-543
Wind Direction and Vector Average at Station AA23 - 30 Meter Level II-544
Wind Direction and Vector Average at Station AA23 - 60 Meter Level II-545
Sigma Horizontal Wind Direction at Station AA23 - 10 Meter Level II-546
Sigma Horizontal Wind Direction at Station AA23 - 30 Meter Level II-547
Sigma Horizontal Wind Direction at Station AA23 - 60 Meter Level II-548
Ambient Air Temperature at Station AA23 - 10 Meter Level. . . II-549
Ambient Air Temperature at Station AA23 - 30 Meter Level. . . II-550
Ambient Air Temperature at Station AA23 - 60 Meter Level. . . II-551
Delta Temperature (60m - 10m) at Station AA23 . . . . II-552
Relative Humidity at Station AB23 - 3 Meter Level II-553
Solar Radiation at Station AB23 . . . . II-554
Barometric Pressure at Station AB23 . . . . II-555
Precipitation at Station AB23 . . . . II-556
Precipitation at Station AD28 . . . . II-557
Pasquill-Gifford Stability Class using DT/DZ - (60m - 10m) at Station AA23 . . . . II-558

LIST OF TABLES (Contd)

Page

NUMBER OF 1-HOUR SAMPLES OF GASEOUS PARAMETERS BY CONCENTRATION AND WIND DIRECTION

Nitric Oxide (NO) at Station AB23 . . . . II-559
Oxides of Nitrogen (NO_x) at Station AB23. . . . . II-560
Nitrogen Dioxide (NO_2) at Station AB23. . . . . II-561
Ozone (O_3) at Station AB23. II-562
Carbon Monoxide (CO) at Station AB23. . . . . II-563
Sulfur Dioxide (SO_2) at Station AB23. . . . . II-564
Hydrogen Sulfide (H_2S) at Station AB23. . . . . II-565

SUMMARY REPORT: FREQUENCY TABLE OF WIND SPEED BY DIRECTION

Station AA23 - 10 Meter Level II-566
Station AA23 - 30 Meter Level II-567
Station AA23 - 60 Meter Level II-568

FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES, STATION AB23 . . . . II-569

DATA ACQUISITION INSTRUMENT EFFICIENCY, STATION AB23. . . . . II-570

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	1	0	1
7	0	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1	1	0	0	1	0	0	0	1	1	2
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	1	( )	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	2	2	1	1	1	1	1	0	0	0	0	0	0	0	1	1	2
10	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1
11	0	0	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	2	1	2
12	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	0	1	0	1	1	1
13	0	1	1	1	1	1	1	1	1	2	(CA)	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2
14	1	1	1	1	1	1	1	1	1	2	2	(CA)	(CA)	(CA)	(CA)	1	1	0	0	0	0	0	0	2	1	2
15	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	2
16	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	2	1	2
17	0	0	1	0	1	1	0	1	1	1	2	1	1	1	0	1	1	1	1	1	0	0	1	1	1	2
18	0	0	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	0	0	0	0	1	0	2	1	2
19	0	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	0	1	0	1	0	1	1	1	1
20	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
21	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	1	1	1	1
22	0	1	0	1	0	0	0	1	1	2	1	1	1	1	1	1	1	1	1	0	1	1	1	2	1	2
23	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
24	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
25	0	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	
PK	1	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2		2

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	4	4	4	4	4	4	4	4	4	6	6	6	4	4	4	4	4	4	4	4	4	4	4	4	6
2	6	4	4	4	4	4	4	4	4	4	6	6	4	6	4	4	4	4	4	4	4	4	4	4	4	6
3	6	4	4	4	4	4	4	4	4	6	6	6	6	4	4	4	4	4	4	4	4	4	4	4	4	6
4	4	4	4	4	4	4	4	4	4	4	4	4	6	6	4	6	4	4	4	4	4	4	4	4	4	6
5	4	4	4	4	4	4	4	4	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4	2	4	6
6	4	4	4	4	4	4	4	4	6	8	(CA)	(CA)	(CA)	(CA)	(CA)	4	4	4	4	4	4	4	4	4	4	8
7	6	4	4	4	4	4	4	4	4	6	8	6	9	8	6	8	6	6	6	6	6	6	6	6	5	9
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	6	6	4	4	4	4	4	( )	6
9	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	4	9	13	6	6	6	6	6	8	6	6	6	6	6	6	4	6	13
10	6	6	6	4	4	6	6	8	6	6	6	6	6	6	6	9	11	11	11	9	9	8	8	8	7	11
11	8	6	6	6	8	8	8	8	8	8	6	8	6	6	6	6	6	4	4	4	4	4	4	4	6	8
12	6	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	4	6	6	6	6	6	6	6	5	6
13	6	6	6	6	6	6	8	8	9	9	(CA)	9	11	9	9	9	8	8	8	6	6	4	4	4	7	11
14	6	6	6	6	6	6	6	4	6	6	6	(CA)	(CA)	(CA)	(CA)	6	4	4	4	6	6	4	4	4	5	6
15	6	4	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	4	4	6	6	4	5	6
16	6	6	6	6	6	6	6	4	6	6	6	4	4	4	4	4	4	4	4	4	4	4	4	4	5	6
17	6	4	4	4	4	4	4	4	8	8	8	8	8	8	6	6	8	8	8	6	6	6	6	6	6	8
18	8	6	6	6	6	6	6	6	6	6	6	6	6	4	4	4	4	4	4	4	4	4	4	4	5	8
19	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	6	4	4	4	4	4	4	6
20	6	4	4	4	4	4	4	4	4	4	6	6	6	4	6	4	4	6	6	6	6	4	6	6	5	6
21	6	6	4	4	6	6	6	6	6	8	6	6	6	6	4	4	6	6	6	6	6	6	6	6	5	8
22	6	6	4	6	6	6	6	6	8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	8
23	6	6	4	6	6	6	6	6	6	6	6	6	6	4	4	4	4	4	4	4	4	6	6	4	5	6
24	6	6	6	4	4	4	4	4	4	4	4	6	4	6	4	4	4	4	4	4	4	4	6	4	4	6
25	6	4	4	4	4	4	4	4	4	6	6	6	6	6	4	4	6	6	4	6	4	4	4	4	4	6
26	6	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	4	6	4	4	4	4	4	4	6
27	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	4	4	4	4	6	6	4	4	4	6
28	6	4	4	4	4	4	4	4	4	4	6	6	6	6	4	4	4	4	4	4	4	4	4	4	4	6
29	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	6
30	6	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	6	4	4	4	4	4	4	4	6
31	6	6	6	6	6	4	6	4	4	4	6	6	6	6	4	4	4	4	4	4	4	4	4	4	5	6
AV	6	4	4	4	4	4	5	4	5	5	6	6	6	5	5	5	5	5	5	5	5	4	4	4	5	
PK	8	6	6	6	8	8	8	8	9	9	13	9	11	9	9	9	11	11	11	9	9	8	8	8		13

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	4	4	4	4	4	4	4	4	4	6	6	6	4	4	4	4	4	4	4	4	4	4	2	4	6
2	6	4	4	4	4	2	4	4	4	4	6	4	4	6	4	4	4	4	4	4	4	4	4	2	4	6
3	6	4	4	4	4	4	4	4	4	4	4	6	6	4	4	4	4	4	4	4	4	4	4	2	4	6
4	4	4	4	4	4	4	4	4	4	4	4	4	6	6	4	6	4	4	4	4	4	4	4	2	4	6
5	4	4	4	4	4	4	4	4	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4	2	4	6
6	4	4	4	4	4	4	4	4	6	8	(CA)	(CA)	(CA)	(CA)	(CA)	4	4	4	4	4	4	4	4	2	4	8
7	6	4	4	4	4	4	4	4	4	4	6	4	6	6	4	6	4	6	6	4	6	6	6	4	5	6
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	6	6	4	4	4	4	2	( )	6
9	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	4	6	9	4	4	4	4	4	8	6	6	6	6	6	6	2	5	9
10	6	4	4	2	2	6	6	6	4	4	4	4	4	4	4	8	11	11	11	9	9	8	8	6	6	11
11	8	6	4	6	6	8	8	8	6	6	4	6	4	4	4	4	4	4	4	4	2	2	4	0	5	8
12	6	4	2	4	4	4	4	4	2	4	4	4	4	4	4	6	4	6	4	4	6	4	6	4	4	6
13	6	4	4	4	4	4	6	6	8	6	(CA)	6	8	6	6	6	6	6	6	4	4	2	2	0	5	8
14	4	4	4	4	4	4	4	2	4	2	2	(CA)	(CA)	(CA)	(CA)	4	2	4	4	6	6	4	4	0	3	6
15	6	4	4	4	4	4	4	4	4	2	2	2	4	4	2	4	4	4	4	2	2	4	4	0	3	6
16	4	4	2	4	4	4	4	2	4	4	4	2	2	2	4	2	4	4	2	2	2	4	4	0	3	4
17	6	4	2	4	2	2	4	2	6	6	4	6	6	6	6	4	6	6	6	4	6	6	4	4	4	6
18	8	6	4	4	4	4	4	4	4	4	6	4	6	2	4	2	4	4	4	4	4	2	4	0	4	8
19	6	2	2	2	2	2	2	2	4	2	2	2	4	2	2	2	4	4	4	4	2	4	2	2	3	6
20	6	2	2	2	2	2	2	2	2	2	4	4	4	2	4	2	2	4	4	4	4	2	6	4	3	6
21	6	4	2	4	4	6	4	4	4	6	4	4	4	4	2	4	4	6	6	4	4	6	4	4	4	6
22	6	4	4	4	6	6	6	4	6	2	4	4	4	4	4	4	4	4	4	6	4	4	4	2	4	6
23	4	2	2	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	2	2	4	4	0	3	4
24	6	4	4	2	2	2	2	2	2	2	2	4	2	4	2	2	2	2	2	2	2	2	4	0	2	6
25	6	2	2	2	4	2	4	4	4	6	4	6	6	6	4	4	6	6	4	6	4	4	4	2	4	6
26	6	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	4	6	4	4	4	4	2	4	6
27	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	4	4	4	4	6	6	4	2	4	6
28	6	4	4	4	4	4	4	4	4	4	6	6	6	6	4	4	4	4	4	4	4	4	4	4	4	6
29	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	6
30	6	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	6	4	4	4	4	4	4	4	6
31	6	6	6	6	6	4	6	4	4	4	6	6	6	6	4	4	4	4	4	4	4	4	4	4	5	6
AV	5	4	3	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	2	4	
PK	8	6	6	6	6	8	8	8	8	8	9	6	8	6	6	8	11	11	11	9	9	8	8	6		11

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	67	71	74	76	74	71	71	71	71	71	71	69	69	69	69	67	67	63	61	63	61	61	57	57	67	76
2	51	53	57	55	45	49	55	57	57	61	61	63	61	63	61	63	63	61	57	55	53	49	49	45	56	63
3	49	55	53	55	55	53	59	59	59	59	63	67	69	69	69	67	63	61	59	57	47	49	45	49	58	69
4	45	45	51	53	51	51	49	51	47	47	55	61	63	65	65	61	59	51	43	41	41	43	49	57	52	65
5	47	49	53	53	51	53	55	55	49	51	67	69	69	69	69	69	67	65	65	63	65	67	67	69	60	69
6	63	67	67	69	67	65	63	67	67	67	71	71	74	74	76	76	73	71	71	69	69	67	67	67	69	76
7	61	65	63	67	57	51	51	53	51	49	49	51	49	49	49	47	45	49	49	49	49	49	49	49	52	67
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	57	49	45	43	43	43	45	45	( )	57
9	(PF)	(PF)	(PF)	(PF)	(PF)	37	35	29	31	35	(MT)	(MT)	41	43	39	35	29	27	27	27	22	18	35	24	32	43
10	6	18	25	49	35	20	22	24	24	24	27	29	33	35	41	43	41	43	45	43	43	47	51	51	34	51
11	51	53	53	51	53	51	49	49	49	57	65	65	65	65	65	65	65	63	53	49	53	55	57	61	57	65
12	53	57	57	53	55	55	57	55	51	49	43	45	51	51	55	65	63	63	59	61	59	59	59	61	56	65
13	45	45	39	45	51	49	49	47	49	51	51	29	49	49	51	51	53	49	47	53	55	61	61	59	49	61
14	53	53	55	57	59	57	59	57	57	(CA)	(CA)	67	82	71	69	71	69	67	63	63	63	65	65	67	63	82
15	63	65	65	67	67	69	69	71	71	71	71	71	71	71	69	67	69	69	69	71	67	69	69	69	68	71
16	65	67	69	67	67	65	65	65	69	69	71	71	71	71	73	73	71	71	69	69	69	69	69	67	68	73
17	63	65	67	69	65	67	65	65	65	(MT)	74	73	74	74	74	76	73	71	71	71	71	71	71	69	70	76
18	61	63	63	63	63	61	61	61	63	69	71	73	74	76	78	76	76	71	71	71	71	69	71	71	68	78
19	69	71	73	71	71	73	73	73	71	71	73	73	73	74	74	73	73	73	71	71	73	71	71	71	72	74
20	65	67	67	69	71	69	71	71	71	71	(MT)	76	74	73	73	73	71	71	71	71	71	71	71	71	70	76
21	67	71	71	71	69	65	65	65	65	69	71	71	73	74	74	74	74	71	71	71	71	71	69	71	70	74
22	65	67	69	65	63	63	63	63	61	63	63	63	63	63	63	63	63	63	61	61	61	61	61	59	63	69
23	51	53	55	53	51	49	49	49	49	51	59	73	73	71	71	71	69	65	65	65	63	63	63	61	60	73
24	59	63	63	63	65	65	63	63	63	63	63	63	65	69	69	69	69	69	69	69	67	63	63	65	65	69
25	61	63	63	63	63	63	63	63	63	63	65	69	69	71	71	71	71	67	67	69	71	71	71	71	66	71
26	69	71	71	69	71	71	71	71	69	67	67	67	71	71	71	71	73	69	67	69	65	69	69	71	69	73
27	71	71	73	71	71	71	71	71	65	65	69	71	71	71	71	71	71	71	71	69	65	63	61	61	69	73
28	55	61	61	61	61	63	61	61	63	63	63	65	67	69	71	71	71	65	65	65	67	67	69	69	64	71
29	69	69	69	67	65	67	69	67	69	65	71	71	71	71	71	71	71	67	67	65	63	63	65	69	68	71
30	65	67	69	69	69	71	69	71	67	67	65	71	71	71	71	71	73	69	69	71	71	71	71	71	69	73
31	67	71	69	71	71	69	69	69	69	71	71	74	74	74	76	74	73	69	69	71	71	71	71	71	71	76
AV	58	60	61	62	61	59	59	60	59	60	63	65	66	66	66	66	65	63	61	61	60	61	61	62	62	
PK	71	71	74	76	74	73	73	73	71	71	74	76	82	76	78	76	76	73	71	71	73	71	71	71		82

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	5	100
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	100	0	0	0	(CA)	0	0	0	0	0	0	0	0	0	5	100
7	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	( )	0
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	100	(CA)	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	6	100
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	(CA)	0	0	0	0	0	0	(CA)	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	57	100
17	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	53	100
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	4	4	4	4	4	4	4	4	16	8	4	0	4	4	4	8	4	4	4	4	4	7	4	7	5	
PK	100	100	100	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100		100

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	3	5	8	10	8	8	5	5	5	8	8	5	5	8	5	5	3	3	3	3	0	3	3	0	5	10
2	0	3	0	3	3	0	3	3	3	3	3	3	3	5	3	3	3	3	0	3	3	3	0	0	2	5
3	3	3	3	0	0	0	3	3	3	3	5	5	8	5	5	5	5	5	5	5	5	3	5	3	4	8
4	3	5	5	3	3	3	3	5	3	5	5	5	5	5	5	8	5	5	5	5	3	3	3	3	4	8
5	3	3	5	5	5	3	3	0	3	5	8	10	10	8	8	5	5	3	3	3	3	5	5	5	5	10
6	0	3	3	3	5	5	5	3	5	5	(CA)	(CA)	(CA)	(CA)	(CA)	5	5	5	3	3	3	3	0	0	3	5
7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	3	0	0	0	0	0	3	( )	3
9	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	3	3	5	5	5	3	0	0	0	0	0	0	0	0	1	5
10	0	0	0	0	0	0	0	0	0	3	0	5	3	3	3	3	0	0	0	0	0	0	0	0	1	5
11	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
12	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	3
13	0	0	0	0	0	0	0	0	0	3	(CA)	8	3	(CA)	(CA)	(CA)	(CA)	5	3	3	3	0	0	0	1	8
14	0	0	0	0	0	0	0	0	0	(CA)	(CA)	5	8	8	8	8	3	3	3	3	3	0	0	0	2	8
15	3	3	3	3	0	0	0	0	3	0	0	0	3	0	0	3	3	0	0	0	0	0	3	0	1	3
16	0	0	3	0	0	0	0	0	0	0	0	3	3	3	3	3	3	0	0	0	0	0	0	0	1	3
17	0	0	0	0	0	0	0	0	0	5	5	3	5	5	3	3	3	3	3	3	3	0	3	0	2	5
18	0	3	0	0	0	0	0	0	0	3	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	3
19	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3
20	0	0	0	0	0	0	0	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	3
21	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0	0	0	0	0	0	0	0	3
23	0	0	3	3	0	0	0	0	0	0	0	0	3	0	0	3	3	0	0	0	0	0	0	3	1	3
24	0	0	3	3	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	3	1	3
25	5	3	3	3	5	5	5	5	8	5	5	5	5	5	8	8	5	3	3	3	3	3	5	5	5	8
26	8	5	8	8	8	8	8	8	8	8	8	5	5	3	3	3	3	3	3	0	3	0	3	3	5	8
27	3	5	3	3	5	5	5	5	5	5	5	5	5	3	3	0	0	0	0	0	0	0	0	0	3	5
28	0	0	3	3	0	3	0	5	5	5	5	3	3	3	3	5	3	3	0	0	5	3	3	5	3	5
29	5	5	5	8	5	8	5	3	5	5	5	3	3	3	0	0	0	0	0	0	0	0	0	3	3	8
30	3	5	3	3	5	3	5	0	3	3	5	5	5	10	13	10	10	5	0	3	3	5	5	5	5	13
31	8	5	5	5	8	5	5	5	5	5	5	10	5	5	5	3	0	0	0	0	0	0	3	3	4	10
AV	2	2	2	2	2	2	2	2	2	3	3	3	4	3	3	3	2	2	1	1	1	1	1	1	2	
PK	8	5	8	10	8	8	8	8	8	8	8	10	10	10	13	10	10	5	5	5	5	5	5	5		13

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	0	0	0	1	0	1	1	1	3	6	4	1	1	1	0	0	0	0	0	0	0	0	0	0	1	6
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	0	1
3	0	1	0	1	1	1	1	1	3	4	6	6	6	4	6	4	4	4	4	4	4	3	4	4	3	6
4	3	3	4	4	3	3	4	4	4	4	6	6	6	4	4	6	3	3	3	3	3	3	3	3	4	6
5	4	3	3	1	1	1	1	1	0	1	1	3	1	1	3	1	1	0	1	0	1	1	0	1	2	4
6	0	1	0	0	0	0	1	0	0	0	(CA)	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	1	0	0	0	1	( )	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	1	3	3	3	3	4	6	8	10	8	10	8	6	7	7	8	10	7	8	6	10
10	7	8	7	8	6	8	8	8	8	13	10	15	11	11	11	13	13	11	10	13	13	11	10	11	10	15
11	11	13	13	14	11	11	11	13	11	11	11	11	11	13	11	11	11	11	11	11	11	11	11	11	11	14
12	11	11	11	11	11	11	13	13	13	13	13	17	15	15	15	14	14	13	11	11	10	11	11	10	12	17
13	10	10	10	8	10	10	10	10	10	14	(CA)	21	15	(CA)	(CA)	(CA)	(CA)	0	0	0	0	0	0	0	7	21
14	0	0	0	0	0	0	0	0	0	(CA)	(CA)	1	1	1	6	6	1	0	0	0	0	0	0	0	1	6
15	0	0	0	0	0	0	0	0	0	0	(CA)	(CA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
22	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	4	4	4	4	4	3	3	4	3	2	6
23	3	4	4	4	3	3	3	3	3	3	4	4	3	4	3	3	4	4	3	3	4	4	3	3	3	4
24	3	3	3	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	7	7	7	8	7	5	8
25	7	8	8	8	8	8	8	10	10	8	8	8	7	7	6	6	4	4	4	6	6	6	7	7	7	10
26	8	8	10	8	10	8	10	10	10	10	10	8	7	7	6	6	7	7	7	6	6	6	6	7	8	10
27	7	8	8	8	8	10	10	10	10	10	8	3	0	0	0	0	0	0	0	0	0	0	0	0	4	10
28	0	0	0	0	1	1	1	3	4	4	4	3	3	1	0	0	0	0	0	0	0	1	1	1	1	4
29	3	4	6	6	4	4	3	3	3	3	3	1	0	0	0	0	0	0	0	0	0	0	1	0	2	6
30	1	3	3	3	3	3	3	3	4	4	4	3	1	1	0	0	0	0	0	0	1	0	1	1	2	4
31	1	3	3	3	3	8	13	13	14	13	13	11	11	10	8	8	8	7	7	8	8	8	8	10	8	14
AV	3	3	3	3	3	3	4	4	4	4	4	5	4	4	3	3	3	3	3	3	3	3	3	3	3	
PK	11	13	13	14	11	11	13	13	14	14	13	21	15	15	15	14	14	13	11	13	13	11	11	11		21

PARTICULATE DATA
UG/M3

C-B TRACT
DEC 1982
OCCIDENTAL OIL SHALE, INC.

			STATION		
DAY	AB20	AB23	AB26	AD42	AD56
1	( )	(IM)	( )	( )	( )
5	( )	6.4	( )	( )	( )
9	( )	(IM)	( )	( )	( )
13	( )	0.2	( )	( )	( )
17	( )	6.3	( )	( )	( )
21	( )	4.8	( )	( )	( )
25	( )	4	( )	( )	( )
29	( )	2.1	( )	( )	( )
AVE	( )	3.97	( )	( )	( )
GM	( )	2.62	( )	( )	( )
PEAK	( )	6.4	( )	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	5	6	5	4	3	3	5	2	4	3	4	5	5	5	4	3	2	1	3	2	2	3	2	4	6
2	2	2	1	0	1	1	2	2	2	2	3	3	2	0	1	1	2	2	1	1	1	1	0	1	1	3
3	0	1	1	0	0	1	0	1	1	1	1	1	1	2	0	1	0	1	1	(CM)	0	1	1	0	1	2
4	0	1	0	0	0	1	1	(CM)	1	1	1	0	1	1	0	3	2	1	2	2	0	1	1	0	1	3
5	1	0	1	1	1	1	1	1	(CM)	1	0	0	0	1	3	3	3	4	3	1	2	3	1	2	2	4
6	2	2	2	2	2	3	2	3	1	4	5	7	6	5	6	4	4	4	4	3	1	1	1	2	3	7
7	2	1	1	1	1	2	1	0	1	1	1	1	2	3	3	2	3	3	3	3	3	3	3	3	2	3
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	(CM)	1	1	(CM)	0	0	( )	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	1	0	(CM)	1	0	1	1	1	1	1	1	0	1	2	1	0	(CM)	(CM)	0	1	2
10	0	1	1	2	1	2	1	1	1	2	1	2	2	3	3	3	2	2	3	2	2	2	3	3	2	3
11	3	3	2	2	2	2	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3
12	1	1	1	0	1	0	1	1	1	0	2	2	1	1	1	3	2	3	2	2	3	3	2	0	1	3
13	(CM)	1	0	2	1	2	1	2	3	6	6	5	3	3	3	3	2	1	3	4	2	2	2	2	3	6
14	2	2	2	1	1	0	0	2	1	0	1	2	0	2	2	2	1	2	2	2	0	3	3	3	2	3
15	3	1	2	1	2	3	4	2	4	4	5	5	4	4	4	4	5	3	0	1	1	0	4	2	3	5
16	4	3	2	0	3	3	3	2	2	1	2	4	4	4	3	3	1	2	2	2	1	1	2	2	2	4
17	3	2	4	3	3	3	4	2	5	4	8	8	10	10	10	10	10	9	8	8	7	7	7	7	6	10
18	4	3	1	1	1	1	1	1	3	5	5	4	4	2	2	2	1	2	2	1	0	0	2	1	2	5
19	2	2	3	2	1	2	2	1	2	1	1	4	7	5	5	4	3	4	1	1	1	2	2	3	3	7
20	2	2	2	2	2	2	1	2	3	3	7	8	8	6	8	8	7	5	5	6	5	6	7	8	5	8
21	7	6	7	6	6	6	5	4	1	3	7	5	7	5	4	4	4	4	5	6	7	5	5	6	5	7
22	8	7	6	5	7	7	5	5	7	6	6	7	6	5	7	7	6	5	4	4	4	4	4	6	6	8
23	4	5	7	7	7	5	4	4	4	3	5	4	3	5	5	4	2	2	3	5	4	4	5	5	4	7
24	4	4	5	7	8	7	7	6	5	6	6	6	7	8	6	6	5	5	5	6	5	4	4	2	6	8
25	3	2	1	2	2	1	1	0	0	(CM)	0	1	1	2	2	2	2	1	1	1	1	1	1	1	1	3
26	1	1	1	1	1	1	1	0	1	1	2	3	1	1	1	3	2	1	1	(CM)	1	1	2	1	1	3
27	1	0	1	2	0	1	0	1	0	0	0	1	2	3	2	3	2	2	3	2	3	4	4	4	2	4
28	3	3	3	3	3	2	2	2	1	1	2	1	0	1	2	1	0	1	1	0	1	0	1	1	2	3
29	1	2	1	2	2	2	2	2	1	1	1	1	1	2	2	2	2	3	1	1	2	0	1	0	2	3
30	0	0	1	1	0	0	0	0	0	0	1	2	3	3	2	3	1	1	2	1	0	0	1	0	1	3
31	1	1	2	1	0	1	0	1	0	(CM)	0	1	1	2	2	2	2	1	1	0	1	0	0	1	1	2
AV	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	2	2	2	2	2	3	
PK	8	7	7	7	8	7	7	6	7	6	8	8	10	10	10	10	10	9	8	8	7	7	7	8		10

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	8	8	8	8	5	4	4	8	3	5	4	5	6	7	6	5	4	3	2	4	3	4	5	4	5	8
2	4	4	2	0	0	2	3	3	3	3	4	4	3	1	1	1	3	3	2	2	2	0	0	2	2	4
3	0	1	1	1	(CM)	2	1	1	2	1	2	1	1	2	0	1	1	1	1	0	1	2	1	0	1	2
4	0	1	1	0	(CM)	0	1	(CM)	2	2	1	0	1	1	1	3	2	1	3	2	0	1	1	1	1	3
5	0	1	2	1	1	1	0	1	0	1	1	1	0	2	4	4	4	5	4	1	3	5	3	2	2	5
6	3	3	3	3	3	4	3	4	1	5	7	9	8	7	8	6	5	6	6	4	1	1	2	3	4	9
7	3	1	2	2	2	3	1	1	2	1	1	1	2	4	3	3	4	4	4	4	4	4	4	4	3	4
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	(CM)	0	1	1	0	0	0	( )	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	1	0	0	0	0	1	2	2	1	2	2	0	2	2	1	1	0	0	1	1	2
10	0	(CM)	3	4	1	0	(CM)	(CM)	(CM)	0	2	2	2	4	2	0	0	0	0	0	0	0	0	0	1	4
11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	2	1	0	1	0	1	1	2
12	0	1	1	1	1	0	1	0	(CM)	0	2	2	1	1	1	4	3	4	3	3	4	4	3	0	2	4
13	0	1	1	3	1	2	2	3	4	8	8	7	4	4	4	4	3	2	4	5	3	3	3	3	3	8
14	3	3	3	2	2	1	1	3	1	0	1	2	0	3	2	4	1	2	4	4	2	5	4	4	2	5
15	4	2	2	2	4	4	5	3	5	4	7	8	6	6	6	6	7	4	1	1	1	1	6	3	4	8
16	5	4	3	1	4	4	4	3	2	2	3	5	6	4	4	4	2	4	4	3	2	2	3	3	3	6
17	4	3	5	4	4	4	5	2	7	7	12	11	14	14	14	14	14	13	12	11	10	10	10	10	9	14
18	6	4	2	2	3	2	1	1	5	8	6	5	4	3	2	3	2	3	4	2	1	2	4	2	3	8
19	3	3	4	4	2	3	3	1	2	2	2	6	9	7	7	5	4	6	3	1	1	2	3	4	4	9
20	3	4	4	4	4	3	2	3	4	4	9	11	10	8	10	10	10	8	8	9	8	8	10	11	7	11
21	9	9	9	9	8	8	8	6	3	4	10	7	9	7	4	5	7	6	8	9	10	7	7	8	7	10
22	11	10	8	7	9	9	8	8	10	8	8	9	7	7	9	8	8	8	6	7	6	5	6	8	8	11
23	5	7	9	9	9	7	6	7	6	4	7	5	4	7	6	5	3	3	4	7	6	5	7	6	6	9
24	5	6	7	10	10	9	9	8	7	8	8	8	9	9	7	7	6	6	6	7	6	5	5	3	7	10
25	4	3	2	2	2	1	1	0	1	0	1	2	2	2	3	3	3	1	1	1	1	1	0	0	2	4
26	0	0	0	1	1	(CM)	1	0	0	2	1	4	2	1	2	4	2	1	1	0	0	0	1	1	1	4
27	2	0	1	2	1	0	0	2	0	(CM)	(CM)	1	2	4	3	4	3	3	3	3	4	4	4	4	2	4
28	4	4	4	4	4	3	3	3	2	2	2	1	0	1	2	1	1	1	3	1	1	1	1	0	2	4
29	1	2	1	4	3	2	2	2	2	2	2	1	2	2	2	3	3	5	2	1	1	0	1	0	2	5
30	(CM)	1	1	1	0	0	0	(CM)	0	0	1	3	3	3	3	4	2	1	1	1	0	0	(CM)	0	1	4
31	1	0	1	0	0	0	1	0	1	1	0	1	1	3	3	2	2	1	0	(CM)	0	1	1	1	1	3
AV	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	
PK	11	10	9	10	10	9	9	8	10	8	12	11	14	14	14	14	14	13	12	11	10	10	10	11		14

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	9	9	10	9	7	6	6	9	4	6	4	5	7	8	7	6	5	4	3	5	4	5	7	6	6	10
2	6	4	3	1	1	3	4	4	4	4	4	4	4	1	1	2	3	4	3	3	3	2	1	1	3	6
3	1	1	3	1	0	2	1	0	2	1	2	2	2	3	0	1	1	2	1	1	1	2	3	0	1	3
4	1	1	2	1	1	1	1	0	2	2	1	1	1	1	1	4	2	1	3	2	1	2	1	2	1	4
5	(CM)	2	2	1	1	1	1	2	1	3	1	1	0	2	4	4	5	7	7	3	4	7	4	3	3	7
6	3	4	4	4	4	5	4	4	1	6	8	10	9	8	8	7	6	8	7	6	2	2	2	3	5	10
7	3	1	2	2	2	2	1	2	2	2	1	2	2	4	4	3	4	4	4	4	4	4	4	4	3	4
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	1	1	1	1	( )	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	0	1	1	0	1	2	1	2	2	1	1	2	1	1	1	1	1	1	2
10	1	1	4	4	2	1	3	1	0	1	2	2	3	4	4	4	4	3	4	4	3	3	4	4	3	4
11	4	4	3	3	3	3	2	3	1	0	0	1	1	0	1	1	1	1	2	1	1	1	1	2	2	4
12	8	3	1	2	4	2	1	1	1	1	1	2	1	1	2	4	3	4	4	3	5	4	4	1	3	8
13	1	2	2	3	2	1	3	4	6	9	9	8	5	5	4	5	3	2	5	6	4	3	4	4	4	9
14	4	4	4	2	3	2	2	2	2	1	1	2	0	4	2	4	1	2	6	7	4	7	6	6	3	7
15	5	4	3	2	5	6	7	4	7	6	8	9	7	6	7	7	8	6	2	2	1	2	7	4	5	9
16	6	6	4	2	4	4	5	4	3	2	3	6	7	5	4	5	2	4	4	3	2	2	4	4	4	7
17	5	4	5	5	5	4	6	3	9	8	14	13	16	16	16	16	16	15	14	13	13	13	12	12	11	16
18	8	6	4	4	4	3	2	3	7	9	7	5	5	3	3	3	2	3	3	4	4	4	6	4	4	9
19	4	4	6	6	3	4	4	2	2	2	2	7	10	7	8	6	6	8	5	(CM)	1	1	2	4	5	10
20	4	4	4	4	5	4	2	4	5	5	11	13	11	10	12	12	13	9	9	12	10	10	12	13	8	13
21	12	11	12	11	10	10	10	8	3	6	12	8	11	8	5	6	8	8	10	11	13	8	9	10	9	13
22	13	12	10	9	12	12	9	9	12	9	9	10	8	8	10	9	9	9	8	8	8	7	8	10	9	13
23	7	8	11	11	11	8	8	8	7	5	8	6	5	8	7	6	4	3	5	8	7	6	8	8	7	11
24	6	7	8	11	12	11	11	9	8	8	9	9	10	10	8	8	7	7	7	8	8	6	6	4	8	12
25	5	4	2	3	3	0	1	1	1	1	2	2	2	3	3	4	3	2	1	2	1	1	0	1	2	5
26	2	1	1	0	2	1	2	0	1	2	2	4	2	2	2	4	3	2	1	1	1	0	2	2	2	4
27	2	1	1	2	2	1	1	2	2	1	1	1	3	4	3	4	3	4	4	4	5	5	5	5	3	5
28	4	5	5	5	5	4	4	4	3	3	3	1	1	2	3	2	2	1	3	3	2	2	1	1	3	5
29	1	2	3	5	3	3	4	3	4	2	2	1	2	2	3	3	4	5	3	1	1	1	1	1	2	5
30	1	1	1	1	1	0	1	1	1	1	1	3	4	4	4	5	3	1	1	1	1	1	0	0	2	5
31	1	1	1	2	1	2	1	1	2	1	1	1	1	3	3	3	2	1	1	1	0	1	1	0	1	3
AV	5	4	4	4	4	4	4	3	3	4	4	5	5	5	5	5	4	4	4	4	4	4	4	4	4	
PK	13	12	12	11	12	12	11	9	12	9	14	13	16	16	16	16	16	15	14	13	13	13	12	13		16

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	164	156	180	174	192	174	158	180	97	169	176	207	213	211	215	207	220	232	241	252	234	234	234	234	200
2	235	234	234	234	235	234	234	234	233	234	249	243	285	5	143	201	224	222	186	199	208	101	86	221	223
3	96	196	208	256	192	227	86	205	130	75	96	70	52	71	45	148	163	135	22	(CM)	30	124	207	158	128
4	229	241	71	153	234	225	235	(CM)	299	256	194	211	344	331	356	315	319	268	236	219	157	237	124	124	241
5	217	214	235	222	201	201	187	210	(CM)	96	71	95	113	218	198	189	191	185	195	94	146	194	167	147	179
6	109	128	152	158	143	152	118	129	94	188	187	205	207	209	197	198	200	197	190	199	103	93	95	156	160
7	184	218	122	178	270	231	232	266	243	273	309	348	309	295	287	286	302	303	301	289	299	297	293	293	276
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	349	249	(CM)	256	208	(CM)	171	132	( )
9	(PF)	(PF)	(PF)	(PF)	(PF)	239	125	(CM)	229	325	285	300	293	305	302	245	351	90	93	108	289	(CM)	(CM)	141	284
10	0	11	165	194	261	287	289	286	286	283	297	287	284	313	307	303	298	288	288	288	288	287	289	288	290
11	288	288	288	289	288	289	287	287	286	289	293	259	262	348	5	17	350	125	176	215	212	214	216	216	275
12	215	214	215	214	216	216	214	215	215	319	297	298	321	323	287	195	170	161	143	140	159	152	119	23	213
13	(CM)	68	125	140	140	139	221	209	200	206	210	215	202	176	186	198	243	312	321	314	265	275	281	278	216
14	282	284	278	292	323	315	305	135	192	79	63	63	56	233	278	336	86	172	194	193	135	198	198	189	229
15	176	137	111	120	190	175	186	169	200	191	217	199	206	202	210	192	193	184	135	125	69	83	185	165	171
16	196	196	166	151	173	172	165	170	174	168	199	199	197	206	180	189	98	125	125	125	63	88	142	119	160
17	138	148	154	132	144	131	132	87	196	192	201	213	215	216	214	217	216	218	216	216	217	218	216	219	189
18	238	269	319	332	335	313	247	337	295	285	291	298	301	313	278	282	212	204	207	208	218	145	188	121	268
19	149	161	184	159	132	179	168	129	119	116	199	210	221	219	212	202	196	199	185	84	106	99	132	145	164
20	131	104	123	117	125	108	85	173	176	152	194	196	197	197	196	199	206	200	187	198	199	180	180	181	169
21	189	194	193	186	180	170	172	170	97	184	195	201	208	206	218	205	199	187	196	191	186	188	176	167	187
22	171	172	176	178	194	197	201	204	191	194	180	197	190	184	184	182	179	190	176	174	150	141	149	159	180
23	164	182	173	167	165	152	138	146	143	201	206	200	214	208	192	182	198	290	292	312	311	331	332	340	201
24	346	330	321	333	329	336	337	349	358	354	338	331	347	1	354	355	356	347	351	347	347	343	327	326	343
25	325	326	325	326	326	325	327	326	326	(CM)	312	313	323	329	315	329	319	320	319	319	319	319	318	320	322
26	318	319	319	319	320	318	319	321	320	319	319	319	316	109	90	295	281	242	197	(CM)	327	327	312	309	313
27	308	9	342	307	345	99	243	159	228	301	352	309	314	299	313	309	302	285	284	286	307	304	304	296	305
28	299	297	291	292	282	278	255	243	230	282	305	306	305	317	297	317	297	257	199	186	201	205	208	233	268
29	107	116	124	138	109	119	126	117	139	128	101	243	198	207	199	203	193	197	214	212	204	202	231	323	168
30	191	22	218	207	301	82	37	351	341	307	320	301	306	301	308	331	318	217	212	211	188	165	223	188	274
31	143	216	210	224	153	239	19	212	248	(CM)	315	333	313	303	284	288	289	229	213	222	234	340	221	113	249
PV	198	209	196	200	215	206	202	200	214	229	252	255	265	261	250	241	244	219	210	213	214	200	206	194	225

WIND DIRECTION # 30M
DEGREES

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	165	158	180	177	196	167	161	184	101	170	179	209	215	214	216	209	220	232	220	253	229	218	229	221	198
2	213	210	217	309	99	195	205	227	211	220	252	245	289	356	146	203	224	220	199	210	208	151	140	228	213
3	120	130	159	328	(CM)	252	90	160	144	87	102	75	60	73	55	139	146	107	27	345	49	105	171	127	103
4	109	262	41	94	(CM)	231	263	(CM)	307	252	193	180	347	329	0	315	326	285	258	235	211	274	103	68	279
5	214	232	267	262	210	172	168	199	180	128	71	102	124	219	201	191	195	189	197	140	169	193	187	170	185
6	124	151	164	167	158	158	129	133	120	194	190	208	209	210	199	200	203	199	192	201	132	155	99	140	169
7	164	195	112	161	284	258	263	276	253	261	302	346	309	294	287	285	302	303	300	288	297	295	293	293	280
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	336	(CM)	12	305	227	202	225	139	( )
9	(PF)	(PF)	(PF)	(PF)	(PF)	254	166	321	228	248	280	302	284	298	295	246	319	109	117	118	285	19	71	106	277
10	153	(CM)	168	198	240	297	(CM)	(CM)	(CM)	278	294	282	282	311	307	297	311	310	310	310	310	310	310	309	290
11	309	310	309	309	310	309	309	309	309	309	309	270	258	345	13	32	341	90	141	267	270	274	270	274	305
12	270	273	273	272	274	270	272	270	(CM)	146	290	297	314	313	268	193	173	165	148	140	163	155	129	217	236
13	315	130	132	138	153	148	227	218	203	209	213	217	205	180	188	205	248	315	325	313	267	278	283	279	223
14	281	283	272	283	320	309	309	114	178	204	66	66	79	234	280	335	77	167	188	197	203	202	200	196	231
15	182	174	153	158	197	182	190	180	205	193	219	203	209	206	213	194	195	187	172	138	82	157	189	175	183
16	198	199	176	178	178	176	175	184	182	172	199	200	199	208	184	192	111	130	133	137	77	100	161	133	168
17	144	157	157	132	147	132	139	110	201	197	205	215	218	218	217	221	220	221	220	219	221	221	220	223	193
18	243	277	307	308	317	325	274	333	291	283	289	295	301	311	278	277	213	202	186	195	199	197	191	175	265
19	175	179	185	172	173	193	189	172	118	117	204	214	223	220	214	205	202	203	206	77	129	121	122	150	176
20	144	113	132	126	124	114	100	181	178	158	196	197	199	200	198	203	209	206	191	199	199	181	181	182	173
21	192	197	197	191	185	173	175	172	99	191	199	205	212	208	219	208	202	193	198	191	189	191	180	173	190
22	174	175	181	184	199	199	205	206	194	199	181	198	191	185	186	184	180	191	180	175	151	146	151	161	182
23	165	183	176	169	166	153	137	149	143	205	210	204	217	211	194	185	204	295	299	321	320	334	333	342	204
24	346	331	322	334	330	336	337	348	356	351	337	331	346	0	352	355	354	347	350	347	347	344	328	318	342
25	322	318	302	298	274	233	233	243	246	238	299	297	321	331	314	329	327	325	267	268	219	215	274	122	282
26	217	145	169	291	235	(CM)	120	146	193	106	73	286	283	109	96	293	285	272	183	61	225	214	272	160	199
27	250	246	356	246	273	120	220	159	175	(CM)	(CM)	301	311	298	314	311	311	290	286	286	311	307	306	297	284
28	300	301	294	295	287	288	276	269	251	275	307	308	309	319	298	314	297	180	168	170	191	212	211	325	276
29	115	134	166	146	115	140	143	150	159	135	105	234	201	208	201	207	197	183	196	235	215	60	261	328	172
30	(CM)	19	101	229	329	0	172	(CM)	270	239	310	305	310	309	312	332	326	241	222	250	234	166	(CM)	37	288
31	117	135	199	270	127	318	0	219	267	270	287	326	307	302	281	285	287	259	230	(CM)	243	300	264	119	269
PV	190	198	190	219	214	214	196	196	200	207	239	252	260	261	248	242	248	219	210	225	219	205	213	186	227

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	169	163	181	179	201	177	169	186	118	174	183	210	216	215	217	211	222	232	229	254	233	231	237	231	202
2	224	221	231	275	215	212	216	230	217	224	252	246	288	352	153	207	223	222	209	223	221	202	221	242	227
3	164	120	151	298	38	257	73	135	148	87	111	86	71	81	48	132	132	89	35	345	48	86	165	251	98
4	123	290	34	197	95	173	243	104	312	263	201	191	6	333	10	323	343	332	279	265	270	330	73	56	312
5	(CM)	251	298	339	220	172	180	197	180	142	73	104	151	222	203	194	197	195	199	185	185	195	194	188	191
6	153	174	179	176	174	168	147	149	154	197	194	210	211	212	199	203	205	199	195	203	174	202	97	140	181
7	163	180	112	167	290	284	274	281	268	266	295	349	313	300	292	291	308	309	306	294	301	301	299	300	288
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	313	293	21	346	270	246	270	247	( )
9	(PF)	(PF)	(PF)	(PF)	(PF)	199	153	124	109	151	300	296	281	294	297	266	232	165	172	153	275	6	62	118	209
10	145	188	175	199	230	0	111	109	280	277	298	289	287	317	315	309	312	312	312	312	312	312	312	312	292
11	312	312	312	312	312	312	312	312	312	311	311	313	270	343	30	37	332	62	117	302	312	310	310	311	321
12	310	309	310	310	310	310	310	309	311	120	257	277	305	295	258	192	179	174	155	152	168	158	142	214	256
13	281	156	142	150	183	182	230	220	207	208	213	217	206	186	191	209	247	307	322	317	279	292	295	291	228
14	290	289	276	278	303	295	300	116	198	243	68	77	119	235	278	336	69	168	193	202	207	207	202	200	235
15	191	196	179	185	200	188	194	190	207	196	217	204	210	207	214	196	196	194	199	179	120	181	191	186	193
16	199	200	183	202	186	183	184	194	191	176	199	202	199	207	186	194	133	140	149	156	91	123	175	148	177
17	155	168	167	139	157	141	151	145	203	200	207	215	217	218	216	220	220	222	220	219	221	221	221	223	196
18	243	276	297	298	307	329	310	324	294	288	294	300	307	316	287	278	223	201	182	187	196	198	190	191	267
19	187	191	186	185	193	201	200	198	130	135	211	216	224	221	215	208	209	209	215	(CM)	176	164	126	164	191
20	170	133	148	141	140	137	152	188	180	164	196	197	199	201	200	203	210	208	196	201	199	186	182	184	180
21	194	198	200	197	191	182	180	176	111	194	201	207	211	209	218	209	205	198	199	191	192	194	185	178	193
22	176	178	186	188	199	200	206	207	194	201	183	198	191	185	187	186	181	190	182	177	158	155	156	163	184
23	169	184	176	170	169	157	141	154	148	207	212	207	217	211	195	187	207	291	296	320	321	338	339	345	205
24	349	337	329	338	336	341	341	351	360	355	342	336	350	6	357	0	359	352	356	351	351	349	335	330	347
25	334	333	331	325	302	315	229	270	272	264	296	303	328	341	321	333	333	343	330	323	186	180	276	211	303
26	291	135	134	287	243	247	201	151	186	137	112	292	291	116	109	297	291	299	158	79	112	199	278	233	205
27	309	254	315	270	263	253	250	177	141	155	192	292	312	306	324	322	327	309	302	297	319	317	314	306	289
28	310	314	307	309	301	306	294	287	275	284	310	316	329	327	303	320	299	191	160	168	166	134	163	302	290
29	150	172	181	151	143	158	159	172	172	156	116	220	207	210	203	210	201	187	197	251	212	70	266	276	186
30	253	328	73	227	299	236	246	249	256	242	281	301	309	309	315	337	335	300	264	276	259	201	50	117	281
31	122	104	142	140	112	358	166	130	132	262	272	322	307	310	286	289	294	278	323	330	168	284	281	176	261
PV	206	209	194	221	224	223	206	187	199	206	231	252	259	262	248	246	246	234	220	244	218	216	226	221	231

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	164	156	180	174	192	174	158	180	97	169	176	207	213	211	215	207	220	232	241	252	234	234	234	234	193	3.1
2	235	234	234	234	235	234	234	234	233	234	249	243	285	5	143	201	224	222	186	199	208	101	86	221	231	1.2
3	96	196	208	256	192	227	86	205	130	75	96	70	52	71	45	148	163	135	22	***	30	124	207	158	128	0.4
4	229	241	71	153	234	225	235	***	299	256	194	211	344	331	356	315	319	268	236	219	157	237	124	124	256	0.6
5	217	214	235	222	201	201	187	210	***	96	71	95	113	218	198	189	191	185	195	94	146	194	167	147	187	1.3
6	109	128	152	158	143	152	118	129	94	188	187	205	207	209	197	198	200	197	190	199	103	93	95	156	179	2.7
7	184	218	122	178	270	231	232	266	243	273	309	348	309	295	287	286	302	303	301	289	299	297	293	293	284	1.5
8	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	349	249	***	256	208	***	171	132	****	****
9	***	***	***	***	***	239	125	***	229	325	285	300	293	305	302	245	351	90	93	108	289	***	***	141	281	0.3
10	0	11	165	194	261	287	289	286	286	283	297	287	284	313	307	303	298	288	288	288	288	287	289	288	289	1.6
11	288	288	288	289	288	289	287	287	286	289	293	259	262	348	5	17	350	125	176	215	212	214	216	216	281	0.9
12	215	214	215	214	216	216	214	215	215	319	297	298	321	323	287	195	170	161	143	140	159	152	119	23	189	0.7
13	***	68	125	140	140	139	221	209	200	206	210	215	202	176	186	198	243	312	321	314	265	275	281	278	218	1.7
14	282	284	278	292	323	315	305	135	192	79	63	63	56	233	278	336	86	172	194	193	135	198	198	189	221	0.6
15	176	137	111	120	190	175	186	169	200	191	217	199	206	202	210	192	193	184	135	125	69	83	185	165	188	2.6
16	196	196	166	151	173	172	165	170	174	168	199	199	197	206	180	189	98	125	125	125	63	88	142	119	170	1.9
17	138	148	154	132	144	131	132	87	196	192	201	213	215	216	214	217	216	218	216	216	217	218	216	219	204	5.5
18	238	269	319	332	335	313	247	337	295	285	291	298	301	313	278	282	212	204	207	208	218	145	188	121	276	1.5
19	149	161	184	159	132	179	168	129	119	116	199	210	221	219	212	202	196	199	185	84	106	99	132	145	183	2.0
20	131	104	123	117	125	108	85	173	176	152	194	196	197	197	196	199	206	200	187	198	199	180	180	181	184	4.3
21	189	194	193	186	180	170	172	170	97	184	195	201	208	206	218	205	199	187	196	191	186	188	176	167	189	5.1
22	171	172	176	178	194	197	201	204	191	194	180	197	190	184	184	182	179	190	176	174	150	141	149	159	182	5.5
23	164	182	173	167	165	152	138	146	143	201	206	200	214	208	192	182	198	290	292	312	311	331	332	340	195	2.2
24	346	330	321	333	329	336	337	349	358	354	338	331	347	1	354	355	356	347	351	347	347	343	327	326	344	5.4
25	325	326	325	326	326	325	327	326	326	***	312	313	323	329	315	329	319	320	319	319	319	319	318	320	323	1.4
26	318	319	319	319	320	318	319	321	320	319	319	319	316	109	90	295	281	242	197	***	327	327	312	309	311	1.0
27	308	9	342	307	345	99	243	159	228	301	352	309	314	299	313	309	302	285	284	286	307	304	304	296	302	1.5
28	299	297	291	292	282	278	255	243	230	282	305	306	305	317	297	317	297	257	199	186	201	205	208	233	277	1.3
29	107	116	124	138	109	119	126	117	139	128	101	243	198	207	199	203	193	197	214	212	204	202	231	323	166	1.1
30	191	22	218	207	301	82	37	351	341	307	320	301	306	301	308	331	318	217	212	211	188	165	223	188	287	0.7
31	143	216	210	224	153	239	19	212	248	***	315	333	313	303	284	288	289	229	213	222	234	340	221	113	257	0.6
VD	193	198	192	190	199	192	184	184	194	211	219	228	231	230	224	226	222	215	217	224	222	218	212	200	213	
VV	1.2	1.0	1.2	1.0	0.9	1.0	0.9	1.0	0.9	1.2	1.7	2.0	2.0	1.8	1.9	1.9	1.5	1.6	1.4	1.2	0.8	0.8	1.1	1.0		1.2

TOTAL NUMBER OF OBSERVATIONS = 711

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	165	158	180	177	196	167	161	184	101	170	179	209	215	214	216	209	220	232	220	253	229	218	229	221	195	4.6
2	213	210	217	309	99	195	205	227	211	220	252	245	289	356	146	203	224	220	199	210	208	151	140	228	222	1.9
3	120	130	159	328	***	252	90	160	144	87	102	75	60	73	55	139	146	107	27	345	49	105	171	127	107	0.7
4	109	262	41	94	***	231	263	***	307	252	193	180	347	329	0	315	326	285	258	235	211	274	103	68	288	0.7
5	214	232	267	262	210	172	168	199	180	128	71	102	124	219	201	191	195	189	197	140	169	193	187	170	190	1.7
6	124	151	164	167	158	158	129	133	120	194	190	208	209	210	199	200	203	199	192	201	132	155	99	140	184	3.8
7	164	195	112	161	284	258	263	276	253	261	302	346	309	294	287	285	302	303	300	288	297	295	293	293	285	1.9
8	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	336	***	12	305	227	202	225	139	****	****
9	***	***	***	***	***	254	166	321	228	248	280	302	284	298	295	246	319	109	117	118	285	19	71	106	273	0.3
10	153	***	168	198	240	297	***	***	***	278	294	282	282	311	307	297	311	310	310	310	310	310	310	309	274	0.8
11	309	310	309	309	310	309	309	309	309	309	309	270	258	345	13	32	341	90	141	267	270	274	270	274	299	0.3
12	270	273	273	272	274	270	272	270	***	146	290	297	314	313	268	193	173	165	148	140	163	155	129	217	191	0.9
13	315	130	132	138	153	148	227	218	203	209	213	217	205	180	188	205	248	315	325	313	267	278	283	279	224	2.3
14	281	283	272	283	320	309	309	114	178	204	66	66	79	234	280	335	77	167	188	197	203	202	200	196	224	1.2
15	182	174	153	158	197	182	190	180	205	193	219	203	209	206	213	194	195	187	172	138	82	157	189	175	194	3.9
16	198	199	176	178	178	176	175	184	182	172	199	200	199	208	184	192	111	130	133	137	77	100	161	133	175	2.8
17	144	157	157	132	147	132	139	110	201	197	205	215	218	218	217	221	220	221	220	219	221	221	220	223	208	8.0
18	243	277	307	308	317	325	274	333	291	283	289	295	301	311	278	277	213	202	186	195	199	197	191	175	269	2.3
19	175	179	185	172	173	193	189	172	118	117	204	214	223	220	214	205	202	203	206	77	129	121	122	150	192	3.0
20	144	113	132	126	124	114	100	181	178	158	196	197	199	200	198	203	209	206	191	199	199	181	181	182	186	6.2
21	192	197	197	191	185	173	175	172	99	191	199	205	212	208	219	208	202	193	198	191	189	191	180	173	192	7.2
22	174	175	181	184	199	199	205	206	194	199	181	198	191	185	186	184	180	191	180	175	151	146	151	161	184	7.7
23	165	183	176	169	166	153	137	149	143	205	210	204	217	211	194	185	204	295	299	321	320	334	333	342	196	3.0
24	346	331	322	334	330	336	337	348	356	351	337	331	346	0	352	355	354	347	350	347	347	344	328	318	343	7.0
25	322	318	302	298	274	233	233	243	246	238	299	297	321	331	314	329	327	325	267	268	219	215	274	122	301	1.4
26	217	145	169	291	235	***	120	146	193	106	73	286	283	109	96	293	285	272	183	61	225	214	272	160	255	0.4
27	250	246	356	246	273	120	220	159	175	***	***	301	311	298	314	311	311	290	286	286	311	307	306	297	296	2.0
28	300	301	294	295	287	288	276	269	251	275	307	308	309	319	298	314	297	180	168	170	191	212	211	325	283	1.7
29	115	134	166	146	115	140	143	150	159	135	105	234	201	208	201	207	197	183	196	235	215	60	261	328	170	1.5
30	***	19	101	229	329	0	172	***	270	239	310	305	310	309	312	332	326	241	222	250	234	166	***	37	307	1.0
31	117	135	199	270	127	318	0	219	267	270	287	326	307	302	281	285	287	259	230	***	243	300	264	119	280	0.7
VD	191	196	190	191	200	188	185	184	193	205	217	227	232	232	224	226	222	210	209	223	217	211	209	198	211	
VV	1.9	1.6	1.8	1.6	1.5	1.4	1.4	1.5	1.5	1.8	2.5	2.8	2.8	2.5	2.6	2.5	2.2	2.3	2.0	1.7	1.4	1.3	1.7	1.6		1.8

TOTAL NUMBER OF OBSERVATIONS = 707

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	169	163	181	179	201	177	169	186	118	174	183	210	216	215	217	211	222	232	229	254	233	231	237	231	199	5.6
2	224	221	231	275	215	212	216	230	217	224	252	246	288	352	153	207	223	222	209	223	221	202	221	242	228	2.7
3	164	120	151	298	38	257	73	135	148	87	111	86	71	81	48	132	132	89	35	345	48	86	165	251	110	0.8
4	123	290	34	197	95	173	243	104	312	263	201	191	6	333	10	323	343	332	279	265	270	330	73	56	315	0.6
5	***	251	298	339	220	172	180	197	180	142	73	104	151	222	203	194	197	195	199	185	185	195	194	188	195	2.5
6	153	174	179	176	174	168	147	149	154	197	194	210	211	212	199	203	205	199	195	203	174	202	97	140	191	4.8
7	163	180	112	167	290	284	274	281	268	266	295	349	313	300	292	291	308	309	306	294	301	301	299	300	294	2.2
8	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	313	293	21	346	270	246	270	247	****	****
9	***	***	***	***	***	199	153	124	109	151	300	296	281	294	297	266	232	165	172	153	275	6	62	118	239	0.4
10	145	188	175	199	230	0	111	109	280	277	298	289	287	317	315	309	312	312	312	312	312	312	312	312	295	1.7
11	312	312	312	312	312	312	312	312	312	311	311	313	270	343	30	37	332	62	117	302	312	310	310	311	317	1.5
12	310	309	310	310	310	310	310	309	311	120	257	277	305	295	258	192	179	174	155	152	168	158	142	214	229	0.9
13	281	156	142	150	183	182	230	220	207	208	213	217	206	186	191	209	247	307	322	317	279	292	295	291	228	2.9
14	290	289	276	278	303	295	300	116	198	243	68	77	119	235	278	336	69	168	193	202	207	207	202	200	229	1.9
15	191	196	179	185	200	188	194	190	207	196	217	204	210	207	214	196	196	194	199	179	120	181	191	186	198	5.1
16	199	200	183	202	186	183	184	194	191	176	199	202	199	207	186	194	133	140	149	156	91	123	175	148	182	3.6
17	155	168	167	139	157	141	151	145	203	200	207	215	217	218	216	220	220	222	220	219	221	221	221	223	209	9.7
18	243	276	297	298	307	329	310	324	294	288	294	300	307	316	287	278	223	201	182	187	196	198	190	191	269	3.0
19	187	191	186	185	193	201	200	198	130	135	211	216	224	221	215	208	209	209	215	***	176	164	126	164	202	4.2
20	170	133	148	141	140	137	152	188	180	164	196	197	199	201	200	203	210	208	196	201	199	186	182	184	190	7.7
21	194	198	200	197	191	182	180	176	111	194	201	207	211	209	218	209	205	198	199	191	192	194	185	178	195	8.9
22	176	178	186	188	199	200	206	207	194	201	183	198	191	185	187	186	181	190	182	177	158	155	156	163	186	9.2
23	169	184	176	170	169	157	141	154	148	207	212	207	217	211	195	187	207	291	296	320	321	338	339	345	197	3.6
24	349	337	329	338	336	341	341	351	360	355	342	336	350	6	357	0	359	352	356	351	351	349	335	330	348	8.1
25	334	333	331	325	302	315	229	270	272	264	296	303	328	341	321	333	333	343	330	323	186	180	276	211	318	1.7
26	291	135	134	287	243	247	201	151	186	137	112	292	291	116	109	297	291	299	158	79	112	199	278	233	239	0.5
27	309	254	315	270	263	253	250	177	141	155	192	292	312	306	324	322	327	309	302	297	319	317	314	306	303	2.2
28	310	314	307	309	301	306	294	287	275	284	310	316	329	327	303	320	299	191	160	168	166	134	163	302	296	1.9
29	150	172	181	151	143	158	159	172	172	156	116	220	207	210	203	210	201	187	197	251	212	70	266	276	181	2.1
30	253	328	73	227	299	236	246	249	256	242	281	301	309	309	315	337	335	300	264	276	259	201	50	117	299	1.2
31	122	104	142	140	112	358	166	130	132	262	272	322	307	310	286	289	294	278	323	330	168	284	281	176	280	0.4
VD	208	209	196	199	213	201	194	195	197	207	215	226	232	230	225	229	226	218	216	228	219	217	215	211	216	
VV	2.3	2.0	2.2	2.0	1.9	1.7	1.9	1.8	1.8	2.3	2.9	3.2	3.1	2.7	2.9	2.8	2.7	2.6	2.4	2.2	1.9	1.7	2.0	2.0		2.3

TOTAL NUMBER OF OBSERVATIONS = 721

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	7	8	8	7	7	3	17	7	13	9	15	13	12	10	10	9	9	1	1	7	0	0	0	0	7	17
2	0	0	0	0	0	0	0	0	0	4	10	12	13	18	16	11	8	7	12	15	13	11	11	4	7	18
3	10	12	16	15	8	8	10	11	11	15	21	25	32	12	18	19	13	9	8	(CM)	22	20	8	16	15	32
4	34	15	9	13	24	11	7	(CM)	8	11	27	40	23	20	19	9	6	9	5	6	25	14	11	22	16	40
5	14	20	6	4	8	15	21	17	(CM)	13	33	33	33	23	11	9	6	5	8	16	13	9	15	15	15	33
6	8	6	13	18	17	6	7	11	27	20	16	12	14	15	10	10	9	8	9	15	23	22	6	4	13	27
7	9	14	6	17	11	5	13	13	6	9	14	12	11	8	9	10	7	7	7	7	6	7	7	7	9	17
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	16	(CM)	7	10	(CM)	16	13	( )	16
9	(PF)	(PF)	(PF)	(PF)	(PF)	12	11	(CM)	30	14	17	11	11	10	7	7	7	4	2	7	7	(CM)	(CM)	14	11	30
10	8	0	7	7	13	1	0	0	0	2	10	10	8	7	9	6	6	0	0	0	0	0	0	0	4	13
11	0	0	0	0	0	0	0	0	0	0	3	26	27	18	36	14	2	7	8	0	0	0	0	0	6	36
12	0	0	0	0	0	0	0	0	0	19	7	9	12	14	18	9	6	5	5	7	6	9	9	34	7	34
13	(CM)	24	42	8	21	10	19	21	11	11	10	9	10	10	15	14	15	10	7	8	8	8	7	7	13	42
14	9	9	8	12	11	21	8	9	25	11	13	14	18	13	15	6	7	8	6	9	41	15	7	6	13	41
15	4	7	12	20	23	8	9	20	13	14	10	10	12	11	10	10	9	21	55	32	32	35	10	12	17	55
16	12	11	13	24	13	20	6	17	25	36	31	12	12	12	21	21	19	9	9	23	37	31	29	11	19	37
17	7	9	7	8	10	14	10	31	32	31	13	13	10	9	9	8	8	8	8	8	8	8	8	7	12	32
18	9	11	10	21	8	13	12	14	8	10	10	13	12	13	21	13	7	6	5	19	26	33	10	15	13	33
19	18	16	10	14	19	19	16	27	13	9	26	14	10	12	10	12	12	7	12	18	10	7	6	5	13	27
20	6	6	7	6	8	9	24	24	6	12	15	10	10	12	10	10	10	11	8	8	8	6	6	6	10	24
21	8	8	8	9	7	5	6	10	31	37	11	15	10	11	15	16	11	15	10	8	8	9	8	7	12	37
22	6	6	8	9	9	9	13	13	9	11	9	10	10	11	8	7	8	9	18	5	6	9	7	7	9	18
23	12	13	6	7	7	8	6	8	8	17	10	12	15	12	13	11	11	8	2	7	7	5	7	7	9	17
24	8	7	7	9	9	8	8	7	6	6	7	6	7	6	8	7	7	8	6	6	6	5	1	0	6	9
25	0	0	0	0	0	0	0	0	0	(CM)	11	5	11	9	10	6	0	0	0	0	0	0	0	0	2	11
26	0	0	0	0	0	0	0	0	0	0	0	0	15	19	12	5	5	7	6	(CM)	2	9	1	0	4	19
27	0	3	5	0	6	3	15	8	3	5	11	11	9	7	6	4	4	7	5	5	4	6	5	6	6	15
28	7	6	5	4	4	5	6	8	6	8	6	9	22	16	17	15	7	0	18	15	17	14	5	18	10	22
29	15	6	12	6	4	6	4	9	6	5	18	29	18	16	17	12	7	7	15	8	5	28	6	11	11	29
30	14	7	10	6	8	18	13	6	9	30	9	10	9	12	9	6	7	5	12	8	8	10	6	13	10	30
31	14	9	5	7	13	11	10	7	17	(CM)	14	11	15	10	9	8	5	4	7	14	9	11	7	5	10	17
AV	9	8	8	9	9	8	9	11	11	13	14	14	14	13	13	10	8	7	9	10	12	12	7	9	10	
PK	34	24	42	24	24	21	24	31	32	37	33	40	33	23	36	21	19	21	55	32	41	35	29	34		55

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	7	8	7	8	9	8	17	7	15	9	13	12	11	9	9	9	10	10	12	8	6	5	3	2	9	17
2	3	4	13	32	24	8	6	5	8	11	10	11	11	16	14	10	7	6	9	8	5	26	19	5	11	32
3	14	8	15	8	(CM)	10	10	1	1	13	16	28	28	10	20	14	12	7	7	10	11	6	9	11	12	28
4	26	11	8	7	(CM)	16	8	(CM)	5	10	22	34	22	19	27	8	6	7	5	8	29	18	12	17	15	34
5	14	16	5	16	11	19	26	19	15	10	32	31	34	18	9	8	5	4	7	30	14	8	14	14	16	34
6	14	9	12	16	18	6	6	9	33	17	14	11	12	14	9	9	8	8	8	12	31	37	5	3	13	37
7	4	18	6	7	10	5	11	9	4	7	14	13	9	6	7	9	5	6	5	5	5	6	6	6	8	18
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	(CM)	9	5	8	15	17	9	( )	17
9	(PF)	(PF)	(PF)	(PF)	(PF)	17	18	15	38	27	20	12	10	11	6	7	8	4	2	5	7	10	5	10	12	38
10	20	(CM)	3	5	17	6	(CM)	(CM)	(CM)	2	9	9	6	6	7	5	1	0	0	0	0	0	0	0	5	20
11	0	0	0	0	0	0	0	0	0	0	0	21	31	18	32	18	3	6	5	2	0	0	0	0	6	32
12	0	0	0	0	0	0	0	0	(CM)	33	7	10	13	17	20	8	7	6	5	8	7	9	8	30	8	33
13	39	21	19	6	18	15	18	16	10	9	9	8	9	10	15	13	14	11	6	7	7	8	5	6	12	39
14	9	7	8	11	14	15	10	9	25	13	14	14	20	12	14	5	6	6	4	6	20	7	6	5	11	25
15	4	8	14	22	14	7	8	20	12	14	8	9	11	10	9	9	8	16	46	33	36	47	9	12	16	47
16	11	11	16	30	15	16	6	19	22	27	27	11	11	11	18	20	19	9	7	25	29	35	30	12	18	35
17	7	10	8	7	10	12	10	32	28	28	13	12	8	8	8	6	6	7	7	7	7	6	5	5	11	32
18	8	10	11	14	9	9	15	10	7	9	8	11	11	12	19	11	6	3	3	21	30	32	6	16	12	32
19	15	14	10	8	18	16	17	28	13	8	27	14	9	12	9	11	11	5	22	24	25	14	4	5	14	28
20	8	5	7	6	6	9	24	18	5	12	13	9	9	10	9	9	9	10	7	6	7	5	5	5	9	24
21	8	8	8	8	6	4	4	9	21	35	10	13	9	11	14	14	10	13	9	7	7	9	8	7	11	35
22	5	6	8	9	9	9	12	12	9	9	9	8	9	11	8	7	7	7	14	4	5	8	6	7	8	14
23	13	13	5	6	6	7	5	7	7	14	9	11	13	11	13	10	11	9	6	8	6	8	8	6	9	14
24	7	8	8	8	8	8	8	6	6	5	6	7	6	7	7	7	7	8	5	5	5	6	6	10	7	10
25	5	9	11	7	6	13	6	16	6	5	13	9	10	9	9	6	4	8	11	10	0	1	27	13	9	27
26	21	17	18	19	19	(CM)	14	23	18	9	8	5	16	18	12	4	4	5	6	16	36	12	7	11	14	36
27	7	17	7	5	11	10	10	8	10	(CM)	(CM)	13	8	6	6	6	8	8	5	5	6	6	5	6	8	17
28	6	6	4	4	4	4	4	5	8	7	9	16	27	15	15	14	5	6	4	19	13	6	8	13	9	27
29	11	8	23	4	4	5	4	11	4	4	15	37	15	13	15	10	7	3	14	8	8	29	11	7	11	37
30	(CM)	6	9	5	12	14	10	(CM)	9	19	10	9	8	10	10	4	8	10	17	11	13	14	(CM)	13	11	19
31	5	31	12	18	16	20	11	13	10	10	14	13	13	10	8	6	4	6	21	(CM)	11	16	5	5	12	31
AV	10	10	9	10	11	10	10	12	12	13	13	14	14	12	13	9	8	7	9	11	13	13	9	9	11	
PK	39	31	23	32	24	20	26	32	38	35	32	37	34	19	32	20	19	16	46	33	36	47	30	30		47

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	6	7	7	8	6	15	7	15	8	13	11	10	9	9	7	8	9	10	7	5	3	2	3	8	15
2	3	3	9	25	29	6	5	4	6	9	9	10	10	17	15	10	5	4	5	5	4	12	17	7	10	29
3	19	5	11	13	12	7	6	15	6	18	15	26	28	9	25	13	8	4	8	10	10	6	13	15	13	28
4	14	24	17	7	7	17	9	10	4	6	22	30	26	19	28	6	6	13	10	7	23	14	10	14	14	30
5	(CM)	14	5	8	15	16	9	10	8	5	29	29	33	21	8	8	4	3	5	20	9	6	9	16	13	33
6	20	8	10	15	16	7	6	11	44	16	13	11	12	11	9	8	7	5	6	7	31	28	8	4	13	44
7	4	20	8	5	8	9	10	6	4	6	17	13	9	6	5	7	5	5	4	4	4	5	5	5	7	20
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	5	6	3	11	11	12	4	( )	12
9	(PF)	(PF)	(PF)	(PF)	(PF)	21	20	25	31	15	19	15	9	12	5	5	4	6	4	6	5	4	3	7	11	31
10	11	8	5	4	19	21	6	20	0	1	9	8	7	5	5	5	0	0	0	0	0	0	0	0	6	21
11	0	0	0	0	0	0	0	0	0	0	0	0	16	25	29	17	4	6	5	5	0	0	0	0	4	29
12	0	0	0	0	0	0	0	0	7	10	28	10	14	26	19	7	9	7	4	10	7	9	9	20	8	28
13	23	20	9	8	16	27	17	12	8	8	8	7	8	10	13	10	14	11	6	6	6	8	5	5	11	27
14	9	7	8	10	14	16	8	10	14	21	19	15	22	10	14	4	7	6	3	3	8	4	4	4	10	22
15	4	6	14	28	10	7	7	17	10	12	8	8	10	9	8	8	7	13	38	34	42	43	7	12	15	43
16	9	9	16	35	15	16	6	15	16	26	29	11	10	12	16	19	36	13	9	31	29	41	26	10	19	41
17	8	11	10	8	9	13	10	35	22	22	10	10	7	7	6	6	5	6	5	5	5	5	4	3	10	35
18	8	8	11	11	7	8	11	10	5	8	8	11	10	10	19	11	6	2	2	9	11	11	5	8	9	19
19	11	14	8	6	13	13	13	21	24	15	26	12	8	10	7	10	8	3	19	(CM)	33	23	18	6	14	33
20	12	6	7	6	6	16	31	15	5	11	12	8	9	9	8	7	7	9	6	4	5	5	4	4	9	31
21	6	6	6	7	6	6	5	7	17	32	8	13	8	10	13	13	8	10	7	6	6	7	7	7	9	32
22	5	6	7	9	8	7	10	10	7	9	8	8	9	10	8	6	6	6	9	4	5	7	5	5	7	10
23	12	11	4	5	5	6	4	7	7	13	8	10	13	9	12	10	10	9	6	7	5	6	6	6	8	13
24	8	7	7	7	7	7	7	6	6	6	6	6	6	7	8	8	8	8	6	5	5	6	6	9	7	9
25	5	7	9	6	6	17	7	14	5	7	6	8	9	9	9	6	4	4	7	7	11	8	16	13	8	17
26	16	12	14	21	8	9	13	21	15	4	7	6	13	13	12	5	4	3	13	11	25	15	11	15	12	25
27	17	6	10	3	4	3	7	7	9	3	7	14	7	6	7	5	7	7	6	5	5	6	5	6	7	17
28	6	4	3	3	5	3	3	3	4	5	9	15	30	14	14	12	4	9	4	7	9	11	12	27	9	30
29	12	12	13	3	6	3	4	10	5	7	14	47	14	13	14	10	6	2	12	6	10	13	14	15	11	47
30	14	8	6	5	9	15	4	8	5	14	9	8	8	10	10	4	7	11	15	10	7	18	16	14	10	18
31	6	6	18	18	12	12	11	10	14	7	8	11	11	10	7	6	5	3	15	12	26	10	5	8	10	26
AV	10	9	9	10	10	10	9	12	11	11	13	13	13	12	12	8	7	7	8	9	12	11	9	9	10	
PK	23	24	18	35	29	27	31	35	44	32	29	47	33	26	29	19	36	13	38	34	42	43	26	27		47

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	-1	-1	-2	-2	-3	-4	-4	-4	-3	-2	-1	1	1	-1	-1	-2	-3	-3	-4	-4	-4	-6	-7	-7	-3	1
2	-7	-6	-6	-6	-6	-6	-6	-6	-4	-3	-1	2	-1	-1	-1	-2	-3	-4	-4	-4	-4	-4	-4	-6	-4	2
3	-7	-8	-8	-9	-9	-9	-9	-8	-6	-2	3	5	5	4	3	2	0	-1	-2	-3	-5	-5	-5	-6	-3	5
4	-7	-7	-7	-7	-7	-7	-8	-8	-6	-2	2	8	8	9	8	5	3	-1	-2	-2	-2	-2	-2	-2	-2	9
5	-3	-4	-5	-5	-5	-6	-7	-7	-4	1	6	7	8	7	3	2	1	-1	-2	-3	-3	-2	-2	-2	-1	8
6	-3	-2	-2	-1	-1	-2	-2	-2	0	3	4	4	5	5	4	2	2	1	1	1	-1	-1	-1	-2	1	5
7	-2	-3	-4	-4	-6	-7	-6	-7	-7	-5	-2	-1	-1	-3	-3	-3	-4	-6	-7	-7	-7	-8	-8	-8	-5	-1
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-5	-8	-8	-9	-9	-10	-11	-11	( )	-5
9	(PF)	(PF)	(PF)	(PF)	(PF)	-9	-8	-7	-6	-4	-2	-2	-2	0	-1	-1	-1	-2	-3	-2	0	0	0	0	-3	0
10	0	-1	-1	1	1	-3	-4	-3	-3	-2	0	0	1	0	-1	-2	-2	-2	-3	-3	-3	-3	-4	-4	-2	1
11	-5	-6	-6	-6	-6	-6	-6	-6	-6	-4	-3	-2	-1	1	3	1	-1	-5	-5	-7	-8	-8	-8	-8	-4	3
12	-9	-9	-10	-10	-11	-10	-9	-9	-7	-2	-2	-1	4	5	7	4	1	-1	-2	-3	-3	-3	-4	-4	-4	7
13	-6	-7	-7	-6	-4	-4	-2	-2	-1	0	2	1	0	0	1	0	-1	-1	-2	-3	-4	-4	-4	-4	-2	2
14	-5	-6	-6	-8	-8	-9	-10	-11	-9	-6	-2	1	1	0	-1	-3	-5	-7	-8	-9	-9	-8	-7	-7	-6	1
15	-7	-8	-7	-7	-6	-5	-5	-4	-4	-3	-2	-1	-1	2	2	-1	-2	-2	-2	-2	-2	-2	-1	-1	-3	2
16	-1	0	0	0	1	0	-1	0	1	4	8	8	8	7	6	5	3	1	0	1	2	1	1	0	2	8
17	1	1	1	0	-1	-1	0	0	3	6	7	7	6	6	5	4	3	3	3	3	2	2	1	1	3	7
18	0	-2	-2	-4	-4	-4	-6	-6	-5	-2	-1	1	1	3	4	1	-1	-4	-6	-7	-8	-8	-6	-7	-3	4
19	-6	-5	-4	-4	-4	-4	-3	-4	-3	2	7	7	6	6	6	5	2	-1	-1	-3	-2	-3	-3	-2	-1	7
20	-2	-3	-3	-3	-2	-2	-2	-1	1	3	7	7	7	7	7	6	4	3	3	3	2	3	2	3	2	7
21	3	3	3	3	2	1	1	2	3	7	8	9	7	7	8	7	6	3	3	3	3	3	3	3	4	9
22	2	2	2	2	3	3	3	2	1	1	2	2	2	3	3	3	1	1	1	0	1	1	1	1	2	3
23	1	2	1	1	1	1	1	1	1	1	1	2	2	1	3	3	0	-2	-3	-4	-5	-5	-6	-6	0	3
24	-6	-7	-7	-7	-7	-8	-8	-8	-8	-7	-7	-7	-7	-7	-7	-8	-8	-9	-9	-10	-11	-11	-11	-11	-8	-6
25	-12	-12	-13	-14	-15	-16	-16	-16	-14	-9	-5	-6	-2	-2	-4	-5	-8	-12	-13	-14	-16	-16	-17	-18	-11	-2
26	-17	-17	-18	-18	-18	-18	-17	-17	-14	-10	-5	-8	-4	2	1	-4	-7	-9	-11	-11	-13	-12	-13	-13	-11	2
27	-14	-14	-15	-16	-16	-17	-16	-14	-12	-8	-3	0	-1	-4	-4	-6	-8	-9	-10	-10	-11	-12	-13	-13	-10	0
28	-14	-16	-16	-16	-17	-18	-18	-19	-17	-13	-11	-7	-6	-4	-6	-7	-11	-14	-16	-17	-18	-18	-19	-18	-14	-4
29	-19	-17	-17	-16	-17	-17	-17	-17	-14	-11	-4	-1	-2	-2	-5	-5	-9	-12	-13	-15	-15	-16	-17	-18	-12	-1
30	-18	-19	-19	-17	-19	-20	-21	-21	-18	-12	-8	-8	-8	-8	-7	-8	-11	-13	-14	-17	-17	-17	-18	-18	-15	-7
31	-18	-18	-18	-17	-18	-18	-18	-19	-16	-12	-7	-3	-2	-3	-5	-6	-8	-10	-11	-12	-13	-14	-15	-15	-12	-2
AV	-6	-7	-7	-7	-7	-7	-7	-7	-6	-3	0	1	1	1	1	0	-2	-4	-5	-6	-6	-6	-6	-7	-4	
PK	3	3	3	3	3	3	3	2	3	7	8	9	8	9	8	7	6	3	3	3	3	3	3	3		9
MN	-19	-19	-19	-18	-19	-20	-21	-21	-18	-13	-11	-8	-8	-8	-7	-8	-11	-14	-16	-17	-18	-18	-19	-18		

MONTHLY MINIMUM = -21

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	-1	-1	-1	-2	-2	-3	-3	-3	-3	-2	-2	-1	0	-1	-1	-2	-3	-3	-4	-4	-4	-5	-5	-5	-3	0
2	-5	-5	-5	-5	-6	-6	-6	-5	-4	-3	-2	-1	-1	-2	-1	-2	-3	-3	-4	-4	-4	-4	-4	-4	-4	-1
3	-6	-7	-7	-8	-8	-8	-9	-8	-6	-3	0	2	2	2	2	1	0	-1	-2	-3	-4	-4	-4	-5	-4	2
4	-6	-7	-6	-7	-7	-7	-7	-7	-6	-4	0	4	6	7	6	4	3	0	-2	-2	-2	-1	-2	-1	-2	7
5	-2	-3	-3	-4	-5	-5	-6	-6	-4	-1	3	5	5	4	2	2	1	-1	-1	-2	-2	-1	-2	-2	-1	5
6	-2	-2	-1	-1	-1	-1	-2	-1	0	2	3	3	3	3	3	2	2	1	1	1	0	0	-1	-1	1	3
7	-1	-2	-3	-3	-4	-6	-6	-7	-6	-5	-3	-2	-2	-3	-3	-3	-4	-6	-7	-7	-7	-8	-8	-8	-5	-1
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-5	-7	-8	-8	-8	-9	-10	-10	( )	-5
9	(PF)	(PF)	(PF)	(PF)	(PF)	-8	-7	-6	-6	-4	-2	-2	-2	-1	-1	-1	-1	-2	-2	-1	0	1	0	1	-2	1
10	0	-1	0	2	2	-1	-3	-3	-2	-2	-1	0	1	-1	-1	-2	-2	-2	-3	-3	-3	-3	-4	-4	-2	2
11	-5	-6	-6	-6	-6	-6	-6	-6	-6	-5	-4	-3	-2	-1	1	0	-2	-4	-4	-6	-7	-7	-8	-8	-5	1
12	-9	-8	-9	-9	-9	-9	-9	-9	-7	-3	-2	-2	2	3	4	3	1	-1	-1	-2	-2	-2	-3	-3	-4	4
13	-4	-5	-6	-4	-4	-3	-2	-1	-1	0	1	1	-1	-1	1	0	-1	-1	-2	-3	-4	-4	-4	-4	-2	1
14	-4	-6	-6	-7	-8	-8	-9	-11	-8	-6	-3	-2	-1	-2	-2	-4	-5	-6	-7	-7	-8	-7	-6	-6	-6	-1
15	-7	-7	-6	-6	-6	-5	-4	-4	-4	-3	-3	-2	-2	0	1	-1	-2	-2	-2	-2	-2	-2	-1	-1	-3	1
16	-1	0	0	0	1	0	0	1	1	3	6	6	6	6	5	4	3	2	1	2	2	2	2	1	2	6
17	1	2	2	1	1	1	1	1	3	4	5	6	5	5	5	4	4	3	3	3	3	2	2	2	3	6
18	1	-2	-2	-3	-3	-4	-5	-6	-4	-3	-1	0	1	1	2	0	-2	-3	-4	-5	-6	-6	-4	-5	-3	2
19	-4	-4	-3	-3	-3	-3	-3	-3	-2	0	3	4	4	4	4	4	2	1	0	-2	-2	-1	-1	-1	0	4
20	-1	-2	-1	-1	-1	-1	-1	1	2	3	5	5	6	6	6	6	5	4	3	3	3	3	3	3	3	6
21	3	3	4	4	3	3	3	3	3	6	7	7	7	7	7	6	6	4	3	4	4	3	3	3	4	7
22	3	3	3	3	3	3	3	2	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	2	3
23	2	2	2	1	2	2	1	1	1	1	1	-4	-2	1	2	1	0	-1	-3	-4	-4	-5	-6	-6	-1	2
24	-7	-7	-7	-7	-8	-8	-8	-8	-8	-8	-8	-8	-7	-8	-8	-8	-8	-9	-9	-10	-11	-11	-11	-11	-8	-7
25	-12	-12	-13	-14	-14	-15	-15	-16	-14	-11	-7	-6	-5	-5	-6	-7	-9	-11	-13	-14	-15	-15	-16	-17	-12	-5
26	-17	-17	-17	-17	-17	-18	-17	-17	-14	-11	-7	-8	-6	-2	-2	-3	-7	-9	-10	-11	-12	-12	-12	-12	-11	-2
27	-13	-13	-14	-15	-16	-17	-16	-13	-11	-8	-4	-1	-2	-3	-4	-6	-8	-9	-10	-10	-11	-12	-13	-13	-10	-1
28	-14	-16	-16	-16	-17	-17	-17	-18	-17	-14	-12	-9	-7	-7	-8	-9	-11	-14	-14	-16	-17	-17	-18	-18	-14	-7
29	-18	-16	-16	-15	-16	-16	-16	-16	-14	-12	-8	-4	-5	-5	-6	-7	-9	-11	-12	-14	-14	-16	-16	-17	-12	-4
30	-18	-17	-18	-17	-18	-19	-21	-21	-18	-13	-11	-9	-8	-8	-8	-9	-11	-13	-13	-16	-17	-17	-17	-18	-15	-8
31	-17	-17	-17	-17	-18	-17	-18	-18	-16	-13	-9	-5	-3	-4	-5	-6	-8	-10	-11	-12	-13	-14	-14	-14	-12	-3
AV	-6	-6	-6	-6	-6	-7	-7	-7	-6	-4	-2	-1	0	0	0	-1	-2	-4	-4	-5	-5	-5	-6	-6	-4	
PK	3	3	4	4	3	3	3	3	3	6	7	7	7	7	7	6	6	4	3	4	4	3	3	3		7
MN	-18	-17	-18	-17	-18	-19	-21	-21	-18	-14	-12	-9	-8	-8	-8	-9	-11	-14	-14	-16	-17	-17	-18	-18		

MONTHLY MINIMUM = -21

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	-1	-1	-2	-2	-2	-3	-3	-4	-3	-2	-1	0	1	-1	-1	-2	-3	-3	-4	-4	-4	-5	-4	-5	-3	1
2	-5	-5	-5	-5	-6	-6	-6	-5	-4	-3	-2	-1	-2	-1	-1	-2	-3	-4	-4	-4	-4	-4	-4	-4	-4	-1
3	-6	-7	-7	-8	-8	-8	-9	-8	-6	-2	1	3	4	3	3	1	0	-1	-2	-3	-4	-4	-4	-6	-3	4
4	-6	-6	-7	-7	-6	-7	-7	-7	-5	-3	1	6	8	8	7	4	3	-1	-2	-2	-2	-1	-1	-1	-1	8
5	-2	-3	-3	-4	-5	-6	-5	-5	-2	1	3	6	5	4	3	2	1	-1	-1	-2	-2	-1	-2	-2	-1	6
6	-2	-2	-1	-1	-1	-1	-2	-1	1	2	3	3	4	4	3	2	2	1	1	1	1	1	0	-1	1	4
7	-1	-2	-3	-3	-4	-5	-5	-6	-6	-5	-2	-1	-2	-3	-3	-3	-4	-6	-7	-7	-7	-8	-8	-9	-5	-1
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-6	-7	-8	-8	-8	-9	-9	-10	( )	-6
9	(PF)	(PF)	(PF)	(PF)	(PF)	-7	-6	-5	-4	-2	-1	-2	-1	0	-1	-1	-1	-2	-1	0	1	1	1	1	-2	1
10	1	0	1	2	2	1	-2	-2	-2	-2	1	1	1	0	-1	-2	-2	-3	-3	-3	-4	-4	-4	-5	-1	2
11	-6	-6	-6	-6	-6	-6	-6	-7	-6	-5	-3	-2	-2	1	2	1	-2	-5	-5	-6	-7	-7	-8	-8	-5	2
12	-9	-8	-9	-9	-9	-10	-9	-9	-5	-1	1	1	3	5	4	3	1	-1	-2	-2	-2	-2	-3	-3	-3	5
13	-4	-4	-4	-4	-3	-3	-2	-1	-1	0	1	1	-1	-1	1	-1	-1	-2	-2	-4	-4	-4	-4	-4	-2	1
14	-5	-6	-6	-7	-8	-8	-9	-10	-8	-5	-1	0	0	-1	-2	-4	-6	-6	-7	-7	-8	-7	-6	-6	-6	0
15	-7	-7	-6	-6	-6	-5	-5	-4	-4	-3	-3	-2	-1	1	1	-1	-2	-2	-2	-2	-2	-2	-1	-1	-3	1
16	-1	0	0	0	1	0	0	1	2	3	6	7	7	6	6	4	3	2	2	2	2	1	2	1	2	7
17	1	2	2	1	1	1	1	1	3	4	6	6	6	5	5	4	4	3	3	3	3	2	2	2	3	6
18	1	-1	-2	-3	-3	-4	-5	-6	-4	-3	-1	0	1	1	2	0	-2	-4	-4	-4	-6	-5	-4	-4	-3	2
19	-4	-4	-4	-3	-3	-3	-3	-3	-2	1	3	4	5	5	5	4	2	1	1	-1	-1	-1	-1	-1	0	5
20	-1	-1	-1	0	0	1	1	1	2	3	6	6	7	6	7	6	4	4	3	3	3	3	3	3	3	7
21	3	3	3	3	3	2	2	2	3	6	7	8	7	7	7	6	6	4	3	4	3	3	3	3	4	8
22	3	3	2	2	3	3	3	2	1	1	1	2	2	2	3	2	1	1	1	1	1	1	1	1	2	3
23	2	2	1	1	2	1	1	1	1	2	1	2	2	1	2	2	0	-2	-3	-4	-5	-5	-6	-6	0	2
24	-7	-7	-7	-7	-8	-8	-8	-8	-8	-8	-8	-8	-7	-7	-8	-8	-9	-9	-10	-10	-11	-11	-11	-12	-9	-7
25	-12	-12	-13	-14	-14	-15	-16	-16	-13	-10	-6	-4	-3	-4	-5	-7	-9	-12	-13	-13	-15	-15	-16	-16	-11	-3
26	-17	-17	-16	-16	-17	-17	-17	-17	-13	-8	-4	-6	-4	-1	0	-4	-7	-9	-11	-11	-12	-12	-12	-12	-11	0
27	-13	-13	-14	-15	-16	-16	-15	-13	-11	-6	-2	2	-1	-3	-4	-6	-8	-9	-10	-10	-11	-12	-13	-14	-10	2
28	-14	-16	-16	-16	-17	-17	-17	-18	-16	-13	-12	-8	-5	-5	-7	-8	-11	-15	-14	-14	-16	-17	-18	-17	-14	-5
29	-17	-16	-16	-14	-16	-16	-15	-15	-13	-10	-7	-3	-4	-4	-6	-6	-9	-11	-12	-14	-14	-16	-16	-16	-12	-3
30	-17	-18	-18	-18	-18	-19	-19	-19	-17	-13	-9	-8	-8	-8	-8	-9	-11	-13	-14	-15	-16	-17	-17	-18	-15	-8
31	-17	-17	-17	-18	-18	-17	-18	-18	-16	-12	-7	-3	-2	-3	-4	-6	-8	-10	-11	-12	-13	-14	-14	-14	-12	-2
AV	-6	-6	-6	-6	-6	-7	-7	-7	-5	-3	-1	0	1	1	0	-1	-2	-4	-4	-5	-5	-5	-6	-6	-4	
PK	3	3	3	3	3	3	3	2	3	6	7	8	8	8	7	6	6	4	3	4	3	3	3	3		8
MN	-17	-18	-18	-18	-18	-19	-19	-19	-17	-13	-12	-8	-8	-8	-8	-9	-11	-15	-14	-15	-16	-17	-18	-18		

MONTHLY MINIMUM = -19

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	-67	-56	-44	-33	-28	-11	-33	-39	-50	-39	-22	-22	-28	-56	-61	-67	-67	-61	-44	-78	-44	56	172	139	-24	172
2	111	56	-11	-22	-22	-33	-33	-44	-56	-61	-100	-167	-83	-50	-50	-44	-56	-61	-50	-22	0	0	-17	6	-34	111
3	28	17	50	67	33	72	0	-17	83	78	-100	-94	-28	-61	-11	-39	-50	-22	-39	-50	-28	44	17	-17	-3	83
4	78	78	-11	17	50	44	33	72	50	-11	72	17	106	89	-44	-44	-44	-44	-6	44	44	61	39	-22	28	106
5	-17	39	89	-6	-44	44	111	133	178	106	-78	-61	-161	-122	-28	-39	-33	6	44	50	61	17	17	28	14	178
6	72	61	17	-39	0	6	56	33	28	-106	-72	-89	-89	-78	-61	-56	-56	-50	-44	-33	0	28	39	56	-16	72
7	78	89	28	50	128	94	28	44	17	-11	-144	11	-39	-67	-67	-78	-89	-78	-83	-94	-89	-94	-100	-106	-24	128
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-61	-56	-83	-44	-28	-6	-17	-28	( )	-6
9	(PF)	(PF)	(PF)	(PF)	(PF)	72	83	128	128	133	94	-11	0	-28	-50	-22	-33	17	128	94	-6	-22	-28	-28	34	133
10	-6	83	111	50	50	283	139	78	56	-11	17	6	-22	-72	-61	-83	-83	-83	-83	-83	-83	-89	-89	-89	-3	283
11	-89	-89	-83	-72	-72	-72	-78	-83	-72	-61	-61	-50	-122	-6	28	6	-6	-61	-22	17	6	6	6	-39	-45	28
12	-50	-6	-6	17	50	-39	-33	-17	183	233	344	256	128	156	22	-44	-22	-39	0	28	6	-11	22	39	51	344
13	106	167	239	156	11	17	-28	-33	-56	-56	-172	-72	-67	-67	-67	-67	-67	-67	-67	-78	-78	-78	-67	-72	-23	239
14	-67	-72	-78	-44	-22	-17	-11	56	128	111	156	39	17	-56	-89	-61	-50	-44	72	89	117	78	-17	-17	9	156
15	0	78	39	11	-11	-39	-56	-50	-56	-67	-67	-67	-72	-50	-67	-78	-72	-67	-50	-39	-33	-22	-39	-44	-38	78
16	-56	-50	-44	-17	-50	-44	-28	-22	-11	-28	-72	0	-28	-22	-33	-39	6	72	100	44	-28	-6	17	33	-13	100
17	22	17	33	33	44	56	28	67	-67	-72	-72	-89	-61	-56	-50	-44	-39	-39	-33	-22	-17	-11	0	6	-15	67
18	39	89	-17	39	72	0	17	6	17	-56	-72	-89	-72	-22	-100	-78	-72	28	111	139	189	189	122	122	25	189
19	72	33	-11	94	106	44	28	67	100	33	-100	-100	-72	-67	-56	-61	-33	61	89	67	22	133	83	72	25	133
20	44	189	194	178	194	178	144	83	6	-22	-44	-39	-33	-44	-44	-50	-33	-17	-6	11	17	22	0	6	39	194
21	-22	-33	-33	-17	0	56	44	6	-6	-39	-50	-72	-61	-50	-67	-50	-50	-22	-6	11	-6	-22	-22	-22	-22	56
22	-17	-17	-22	-28	-33	-44	-56	-67	-61	-67	-67	-67	-61	-61	-56	-56	-56	-44	-39	6	0	-39	-44	-44	-43	6
23	-56	-61	-56	-44	-44	-50	-44	-39	-56	-33	-44	-22	-56	-67	-72	-72	-67	-72	-94	-78	-72	-72	-78	-83	-60	-22
24	-83	-83	-78	-83	-89	-83	-83	-83	-89	-94	-94	-89	-100	-89	-106	-94	-94	-89	-89	-83	-78	-72	-72	-78	-87	-72
25	-56	-44	-44	-22	17	6	-17	22	150	67	44	61	78	56	17	-39	-44	-39	-61	11	0	-39	56	139	13	150
26	6	17	144	133	133	106	-22	11	161	244	294	189	150	94	78	0	-50	-22	-83	-22	67	-6	89	28	72	294
27	17	22	-6	44	11	33	17	33	133	239	239	278	89	-17	-39	-67	-89	-72	-72	-78	-78	-89	-89	-94	15	278
28	-89	-61	-56	-56	-56	-22	22	56	89	28	6	78	139	100	28	-50	-67	-106	44	178	133	56	50	72	22	178
29	117	128	83	100	122	106	83	106	122	111	6	-83	-117	-56	-39	-44	-33	78	133	17	-33	-56	39	111	42	133
30	0	22	22	-94	17	0	72	83	56	33	122	83	22	28	-6	-72	-67	-83	-72	56	0	-11	-39	-50	5	122
31	17	78	44	-100	-50	72	0	100	61	128	183	189	144	44	78	22	-39	-61	-83	-83	-28	-50	44	-6	29	189
AV	5	24	17	11	18	28	13	23	39	24	5	-3	-17	-23	-36	-50	-52	-37	-16	-1	-2	-3	3	1	-1	
PK	117	189	239	178	194	283	144	133	183	244	344	278	150	156	78	22	6	78	133	178	189	189	172	139		344
MN	-89	-89	-83	-100	-89	-83	-83	-83	-89	-106	-172	-167	-161	-122	-106	-94	-94	-106	-94	-94	-89	-94	-100	-106		

MONTHLY MINIMUM = -172

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	100	100	85	79	80	83	84	83	79	78	72	69	65	73	75	77	80	81	81	96	96	95	94	94	83	100
2	94	94	93	93	94	96	95	95	95	84	77	70	69	67	76	76	76	86	87	87	87	87	88	89	86	96
3	89	90	91	93	94	94	95	95	96	73	57	46	44	41	41	43	54	65	69	81	88	93	94	96	76	96
4	97	97	98	98	98	98	98	98	98	85	64	48	43	38	35	45	46	70	87	87	87	87	87	87	78	98
5	91	94	95	95	95	97	97	97	94	68	45	40	37	35	41	48	52	63	66	71	72	65	65	66	70	97
6	67	73	74	71	65	66	68	70	66	57	50	47	46	46	49	50	54	56	57	62	64	66	69	75	61	75
7	78	78	81	92	97	97	98	97	97	83	80	76	80	82	82	82	86	93	97	98	98	98	98	98	89	98
8	98	98	98	90	98	98	98	98	98	91	85	79	73	56	52	51	51	60	76	84	89	93	95	95	84	98
9	96	97	97	97	97	97	97	97	97	94	82	68	66	60	58	61	64	69	90	97	98	98	98	98	86	98
10	98	98	98	98	98	98	98	98	98	98	98	98	98	97	97	96	95	94	94	94	94	94	94	91	96	98
11	91	91	91	92	92	92	92	92	92	90	77	72	70	64	55	52	53	65	84	88	91	91	91	92	82	92
12	92	92	92	92	92	92	92	92	92	92	68	64	55	46	42	39	37	45	60	66	68	70	70	71	72	92
13	58	61	62	60	55	53	50	48	51	67	67	66	68	69	67	65	60	71	80	76	71	69	67	64	64	80
14	60	54	44	27	19	11	6	30	86	73	56	49	44	41	44	52	53	51	53	49	45	40	40	38	44	86
15	32	20	18	20	20	28	30	30	38	50	52	54	52	50	49	50	48	45	42	39	39	38	36	36	38	54
16	34	34	34	32	30	29	29	28	34	36	29	28	29	28	25	25	26	28	29	28	27	26	26	26	29	36
17	26	24	24	23	23	21	21	23	27	28	28	26	24	22	22	21	22	21	20	19	18	18	18	18	22	28
18	19	22	23	27	30	32	37	41	63	53	47	43	40	38	35	36	36	40	40	38	38	36	31	29	36	63
19	27	26	24	24	23	21	20	25	34	28	22	23	24	24	24	24	26	28	26	27	24	24	24	22	25	34
20	22	22	21	21	20	19	18	18	23	27	26	24	28	27	26	27	27	26	26	25	25	24	23	22	24	28
21	21	21	20	19	20	20	20	21	30	27	29	26	26	26	24	25	26	25	25	24	23	23	23	22	24	30
22	21	20	20	20	20	20	20	25	46	56	58	64	63	63	63	64	64	59	55	54	52	49	49	49	45	64
23	46	45	49	51	47	45	42	44	63	70	81	80	67	65	61	61	61	62	74	73	70	67	63	58	60	81
24	53	55	44	33	20	16	8	13	74	93	93	94	93	92	89	88	58	15	7	2	1	0	0	0	43	94
25	0	0	1	2	3	3	3	29	93	95	91	86	68	57	57	56	58	62	39	3	1	3	3	3	34	95
26	3	5	5	5	5	5	5	34	90	83	68	69	56	38	45	52	53	57	60	34	8	3	3	3	33	90
27	3	3	3	4	5	5	5	24	83	69	53	56	57	59	60	62	75	76	63	39	20	7	0	0	35	83
28	0	1	3	3	3	3	4	29	93	95	90	76	59	51	50	48	50	57	23	3	3	3	4	5	32	95
29	5	5	5	5	5	5	5	23	67	58	42	30	29	28	31	31	36	42	32	9	1	3	3	3	21	67
30	3	5	5	5	5	5	5	26	74	55	56	54	54	53	53	54	54	35	4	2	3	3	3	5	26	74
31	5	5	5	5	5	5	5	30	84	74	57	45	40	43	43	43	44	47	48	34	19	7	3	3	29	84
AV	49	49	48	48	47	47	47	53	73	69	61	57	54	51	51	52	52	55	55	51	49	48	47	47	52	
PK	100	100	98	98	98	98	98	98	98	98	98	98	98	97	97	96	95	94	97	98	98	98	98	98		100
MN	0	0	1	2	3	3	3	13	23	27	22	23	24	22	22	21	22	15	4	2	1	0	0	0		

MONTHLY MINIMUM = 0

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	1	1	1	1	1	1	1	3	10	17	20	24	26	16	15	5	2	1	1	1	1	1	1	1	157	26
2	1	1	1	1	1	1	1	2	7	15	20	27	11	10	12	8	2	1	1	1	1	1	1	1	132	27
3	1	1	1	1	1	1	1	5	21	38	47	43	34	23	18	6	2	1	1	1	1	1	1	1	251	47
4	1	1	1	1	1	1	1	2	17	32	40	45	37	35	19	14	4	1	1	1	1	1	1	1	259	45
5	1	1	1	1	1	1	1	5	21	37	41	41	36	26	16	10	4	1	1	1	1	1	1	1	247	41
6	1	1	1	1	1	1	1	2	11	22	31	35	38	31	14	4	2	1	1	1	1	1	1	1	207	38
7	1	1	1	1	1	1	1	2	7	13	24	23	16	16	12	8	4	1	1	1	1	1	1	1	140	24
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	1	1	1	1	1	1	1	11	4
9	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	2	5	7	14	10	17	14	7	2	2	2	2	2	3	3	3	3	100	17
10	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
11	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
12	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
13	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
14	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
15	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
16	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
17	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
19	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
20	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
21	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
22	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
23	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
24	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
25	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
26	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
27	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
28	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
29	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
30	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
31	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
TL	7	7	8	7	7	10	8	24	100	181	238	248	215	171	112	57	25	10	10	11	12	13	11	11	1503	
PK	1	1	1	1	1	1	1	5	21	38	47	45	38	35	19	14	4	2	2	2	3	3	3	3		47

BAROMETRIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	770	770	770	770	771	770	771	771	771	770	770	770	770	770	771	772	772	773	773	775	775	775	776	776	772	776
2	777	777	777	778	779	779	780	781	782	782	782	783	783	783	784	784	785	786	787	787	789	788	789	790	783	790
3	790	791	792	792	792	793	793	793	794	794	793	792	792	792	791	791	792	792	791	792	792	792	792	792	792	794
4	791	791	791	791	791	791	790	791	790	790	791	789	789	789	788	788	789	789	790	789	790	789	789	789	790	791
5	790	789	790	789	790	790	790	790	791	791	790	790	789	790	790	790	789	789	789	790	790	790	790	790	790	791
6	789	789	789	789	789	788	788	787	789	791	791	791	791	791	791	788	787	789	788	789	788	789	789	788	789	791
7	788	788	788	787	788	788	788	788	790	790	790	790	788	787	787	787	788	789	790	791	791	792	793	794	789	794
8	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	795	796	798	798	800	800	799	800	( )	800
9	(PF)	(PF)	(PF)	(PF)	(PF)	798	798	798	797	797	797	796	796	795	795	791	788	788	789	789	789	789	789	789	793	798
10	789	789	789	788	788	788	788	788	788	790	791	791	790	789	789	789	788	789	790	790	791	791	792	792	789	792
11	792	792	793	793	794	794	794	795	796	796	796	795	795	795	795	795	795	795	795	796	796	796	796	796	795	796
12	796	795	796	796	796	795	795	794	794	794	794	792	791	790	790	790	790	791	791	790	790	789	789	788	792	796
13	788	787	787	786	786	785	785	785	784	783	783	783	779	779	783	780	779	779	778	779	781	781	782	784	783	788
14	785	785	786	787	788	789	789	790	790	790	791	789	788	788	787	787	788	790	791	791	792	791	791	792	789	792
15	793	792	793	792	792	792	792	793	793	793	795	794	791	791	790	791	791	791	792	792	793	793	793	793	792	795
16	792	792	792	793	792	792	793	792	793	793	793	794	794	793	793	792	793	794	794	795	794	794	794	794	793	795
17	794	793	793	793	793	793	793	792	792	790	787	787	787	787	787	788	789	789	789	789	790	789	789	789	790	794
18	789	790	791	791	792	792	792	794	794	794	793	792	792	792	793	793	794	794	796	796	796	796	796	796	793	796
19	796	795	795	795	795	795	794	795	795	794	793	792	791	791	791	791	792	792	793	793	794	794	793	793	793	796
20	793	793	792	792	791	791	791	791	791	790	787	789	785	785	786	786	787	788	788	788	789	789	789	788	789	793
21	789	788	788	789	788	788	788	788	788	786	784	785	785	785	785	785	786	786	786	786	786	786	785	785	786	789
22	785	785	785	784	784	784	785	785	785	785	785	784	784	783	783	783	783	783	784	783	782	783	782	781	784	785
23	780	779	778	778	777	776	776	776	775	775	774	773	772	773	773	773	773	774	775	776	776	777	777	778	776	780
24	777	778	778	779	779	780	780	781	782	783	784	784	784	784	786	787	788	789	789	790	791	791	792	793	785	793
25	793	793	794	793	792	793	793	793	792	792	793	793	793	792	792	793	794	794	795	795	794	793	793	792	793	795
26	791	791	791	791	790	790	789	790	789	789	788	787	787	787	786	787	787	788	789	789	789	787	787	787	789	791
27	787	787	786	785	784	785	785	785	785	785	785	784	785	784	784	786	787	788	788	788	789	789	789	790	786	790
28	789	789	788	788	789	789	788	788	788	789	789	789	788	789	790	790	791	792	791	791	791	791	790	789	789	792
29	788	788	788	788	787	786	787	786	786	786	786	785	785	786	785	786	787	787	787	787	787	785	786	786	786	788
30	785	784	784	784	784	784	785	784	786	786	786	786	786	787	788	788	789	790	791	790	790	789	790	789	787	791
31	789	789	790	789	789	789	789	790	790	790	790	790	790	791	791	791	793	794	794	794	793	793	793	793	791	794
AV	788	788	788	788	788	788	788	788	789	789	788	788	787	787	787	787	788	789	789	789	790	789	789	790	788	
PK	796	795	796	796	796	798	798	798	797	797	797	796	796	795	795	795	795	796	798	798	800	800	799	800		800
MN	770	770	770	770	771	770	771	771	771	770	770	770	770	770	771	772	772	773	773	775	775	775	776	776		

MONTHLY MINIMUM = 770

PRECIPITATION
CM*100

CB-TRACT
TRAILER AB23
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1																					3				3	3
2							3		3																5	3
3											(TR)	(TR)	(TR)												( )	
4																									( )	
5																									( )	
6										3															3	3
7																									( )	
8																									( )	
9																			3	10	25	3			41	25
10																									( )	
11													3	(TR)	(TR)	3									5	3
12																									( )	
13																			3	13	10		3	3	30	13
14																									( )	
15																									( )	
16																									( )	
17																									( )	
18																									( )	
19																									( )	
20																									( )	
21																									( )	
22																									( )	
23								3	5		3								23	5	3	5	5	3	53	23
24	3	3	5										10												20	10
25		3					3															5			10	5
26																									( )	
27				3															5	3	3			3	15	5
28							5	3	5											5	3			3	23	5
29	3																					3		3	8	3
30			3	3	5															3	3		3	3	20	5
31			3				5	5																	13	5
TL	5	5	10	5	5	( )	15	10	13	3	3	( )	13	( )	( )	3	( )	( )	33	38	48	15	10	15	249	
PK	3	3	5	3	5		5	5	5	3	3		10			3			23	13	25	5	5	3		25

PRECIPITATION
CM*100

CB TRACT
MRI AD28
DEC 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1												8									3				10
2	3					3			3	3															10
3																									
4																									
5																									
6																									
7																									
8						(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )
9	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)										13	23	3			38
10												3													3
11																						3			3
12										3															3
13																			10	13	10		5		38
14																									
15																									
16																									
17																									
18			3																						3
19																									
20																									
21																									
22																									
23										3	5	3							3	23	13	3	5	3	58
24	3	5	5	3	5			(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
25	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
26	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
27	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)							3	3	3	3	3			13
28																									
29																									
30																									
31																									
TL	5	5	8	3	5	3			3	8	5	13						3	15	51	51	10	10	3	( )

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
DEC 1982
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	D	D	D	D	E	D	D	D	D	E	E	D	D	D	D	D	D	D	C	D	E	F	F	D
2	F	E	E	E	E	D	D	D	D	D	B	B	C	D	D	D	D	D	D	E	E	E	E	E	D
3	E	E	E	E	E	E	E	E	F	F	A	B	D	D	E	D	D	E	D	( )	D	E	E	E	E
4	F	F	E	E	E	E	E	( )	E	E	E	E	F	F	D	D	D	D	E	E	E	E	E	E	E
5	E	E	F	E	D	E	F	F	( )	F	C	D	A	A	D	D	D	E	E	E	E	E	E	E	E
6	E	E	E	D	E	E	E	E	E	B	D	D	D	C	D	D	D	D	D	D	E	E	E	E	D
7	F	F	E	E	F	F	E	E	E	E	A	E	D	D	D	C	B	C	C	B	B	B	B	B	D
8	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	( )	D	D	( )	E	D	( )
9	( )	( )	( )	( )	( )	E	F	( )	F	F	F	E	E	D	D	E	D	E	F	F	E	( )	( )	D	( )
10	E	F	F	E	E	F	F	F	E	E	E	E	E	D	D	C	C	C	C	C	C	B	B	B	D
11	B	B	C	D	D	D	C	C	D	D	D	D	A	E	E	E	E	D	E	E	E	E	E	D	D
12	D	E	E	E	E	D	D	E	F	F	F	F	F	F	E	D	E	D	E	E	E	E	E	E	E
13	( )	F	F	F	E	E	D	D	D	D	C	D	D	D	D	D	D	D	D	C	C	C	D	D	D
14	D	D	C	D	E	E	E	E	F	F	F	E	E	D	B	D	D	D	E	F	F	F	E	E	E
15	E	F	E	E	E	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	E	D	D	D
16	D	D	D	E	D	D	D	E	E	D	D	E	D	E	D	D	E	E	F	E	D	E	E	E	E
17	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
18	E	F	E	E	E	E	E	E	E	D	D	B	D	E	A	C	D	E	F	F	F	F	F	F	E
19	E	E	E	F	F	E	E	E	F	E	A	B	D	D	D	D	D	E	F	E	E	F	F	E	E
20	E	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	E	D	D	D	E
21	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	E	D	D	D	E	E	D	D
22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D
23	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	B	C	D	D	C	C	D
24	C	C	C	D	D	D	D	D	C	D	D	C	D	D	C	C	B	B	B	C	C	D	D	C	C
25	D	D	D	E	E	E	E	E	F	( )	E	E	F	E	E	D	D	D	D	E	E	D	E	F	E
26	E	E	F	F	F	F	E	E	F	F	F	E	F	F	F	E	D	E	C	( )	E	E	F	E	E
27	E	E	E	E	E	E	E	E	F	F	F	F	F	E	D	D	B	D	D	C	C	B	B	B	D
28	B	D	D	D	D	E	E	E	F	E	E	F	F	F	E	D	D	A	E	F	F	E	E	E	E
29	F	F	F	F	F	F	F	F	F	F	E	C	A	D	D	D	D	F	F	E	D	D	E	F	E
30	E	E	E	B	E	E	E	F	E	E	F	F	E	E	E	D	D	C	D	E	E	E	D	D	E
31	E	F	E	A	D	E	E	F	E	( )	F	F	F	E	F	E	D	D	C	C	D	D	E	E	E
AVE	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D

TOTAL OCCURRENCES: A= 10 B= 28 C= 43 D=275 E=243 F=112 HOURS MISSING= 33

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OI

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION UG/M**3		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		1	1	0	2	2	2	1	2	2	2	2	1	2	2	2	2	0	
GT	65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60. -	65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55. -	60.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50. -	55.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45. -	50.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40. -	45.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. -	40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30. -	35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. -	30.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20. -	25.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. -	20.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. -	15.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. -	10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	5.	19	6	3	9	28	25	51	41	79	117	83	24	16	83	81	36	12	713
TOTAL		19	6	3	9	28	25	51	41	79	117	83	24	16	83	81	36	12	713
MEAN CONC.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	5	5	5	5	5	5	5	9	11	9	7	7	13	9	5	5	
GT 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
35. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
15. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 15. :	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0 :	5
5. - 10. :	9	3	1	4	10	4	15	19	41	46	20	7	7	57	46	17	5 :	311
LT 5. :	10	3	2	5	18	21	36	22	38	70	63	17	9	22	35	19	7 :	397
TOTAL :	19	6	3	9	28	25	51	41	79	117	83	24	16	83	81	36	12	713
MEAN CONC.	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION UG/M**3		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX		7	5	5	5	5	5	5	5	7	7	5	7	5	11	5	5	5	
GT	65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60. -	65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55. -	60.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50. -	55.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45. -	50.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40. -	45.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. -	40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30. -	35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. -	30.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20. -	25.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. -	20.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. -	15.	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
5. -	10.	5	1	1	1	6	4	4	5	16	18	15	4	3	35	32	6	5	161
LT	5.	14	5	2	8	22	21	47	36	63	99	68	20	13	45	49	30	7	549
TOTAL		19	6	3	9	28	25	51	41	79	117	83	24	16	83	81	36	12	713
MEAN CONC.		3	4	4	3	3	3	3	3	3	3	3	4	3	5	4	3	4	3

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	70	68	82	68	70	72	72	72	76	76	76	70	78	76	76	74	70	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
70. - 80. :	2	0	0	0	9	6	7	10	30	55	24	2	2	17	27	8	1 :	200
60. - 70. :	13	4	3	6	11	17	28	20	42	42	20	12	7	15	38	26	2 :	306
50. - 60. :	1	1	0	2	2	1	5	7	6	17	27	3	6	14	7	2	2 :	103
40. - 50. :	0	1	0	1	3	0	8	3	2	6	11	5	1	25	7	0	4 :	77
30. - 40. :	0	0	0	0	0	0	2	0	0	0	1	2	1	2	2	0	1 :	11
20. - 30. :	1	0	0	0	2	1	1	1	0	0	1	0	0	7	0	0	1 :	15
LT 20. :	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1 :	4
TOTAL :	19	6	4	9	27	25	51	41	80	120	84	24	17	81	81	36	12	717
MEAN CONC.	58	61	72	62	62	65	60	62	66	66	60	56	59	53	63	65	47	61

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO)

CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	0	0	0	114	114	114	114	114	114	114	114	114	0	114	0	0	0	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	0	0	0	1	3	1	9	2	4	5	2	1	0	2	0	0	0 :	30
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	19	6	4	9	25	24	41	39	76	115	81	22	17	77	77	36	11 :	679
TOTAL :	19	6	4	10	28	25	50	41	80	120	83	23	17	79	77	36	11	709
MEAN CONC.	0	0	0	11	12	4	20	5	5	4	2	4	0	2	0	0	0	4

0 = NO OBSERVATIONS

(01/12/83-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	11	12	5	9	9	11	11	12	13	15	20	13	11	16	15	12	12	
GT 13. :	0	0	0	0	0	0	0	0	1	3	1	1	0	4	2	0	0 :	12
12. - 13. :	0	1	0	0	0	0	0	1	0	1	3	0	0	9	2	1	1 :	19
11. - 12. :	2	1	0	0	0	1	3	1	1	1	10	0	2	11	3	1	0 :	37
10. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
9. - 10. :	0	1	0	1	1	1	3	2	0	2	2	2	0	5	10	0	2 :	32
8. - 9. :	4	0	0	0	0	0	2	0	0	1	3	1	0	10	13	5	1 :	40
7. - 8. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
6. - 7. :	1	0	0	0	1	2	0	1	0	2	1	1	1	0	8	4	1 :	23
5. - 6. :	5	0	2	1	3	0	2	0	2	2	0	0	2	2	6	7	1 :	35
4. - 5. :	4	2	0	3	0	3	1	6	8	5	3	1	0	4	7	9	2 :	58
3. - 4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2. - 3. :	1	1	1	0	4	2	12	7	2	5	12	3	1	3	7	4	1 :	66
1. - 2. :	0	0	1	2	5	2	4	2	10	17	9	5	1	2	2	0	0 :	62
LT 1. :	2	0	0	2	13	14	24	21	53	76	39	9	10	33	21	5	3 :	325
TOTAL :	19	6	4	9	27	25	51	41	77	115	83	23	17	83	81	36	12	709
MEAN CONC.	5	7	3	3	1	2	2	2	1	1	3	2	2	5	5	5	5	3

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(12/01/82 TO 12/31/82)

CONCENTRATION MAX UG/M**3		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM		TOTAL
		5	5	7	7	10	10	7	7	10	7	7	5	7	10	13	10	5		
GT	13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	:	1
12. -	13. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
11. -	12. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
10. -	11. :	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	2	0	:	7
9. -	10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
8. -	9. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
7. -	8. :	0	0	2	1	0	1	2	1	4	3	3	0	1	0	13	2	0	:	33
6. -	7. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
5. -	6. :	4	4	2	4	6	4	6	9	5	16	14	6	1	9	24	5	4	:	123
4. -	5. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
3. -	4. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
2. -	3. :	2	0	0	1	9	6	11	8	16	36	31	10	4	16	26	9	1	:	186
1. -	2. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
LT	1. :	13	2	0	3	11	13	32	23	51	61	36	7	11	57	16	18	7	:	361
TOTAL	:	19	6	4	9	27	25	51	41	77	116	84	23	17	83	81	36	12		711
MEAN CONC.		1	3	6	3	2	2	1	1	1	1	2	2	1	1	3	2	1		2

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(12/01/82 TO 12/31/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	7	0	0	1	2	2	4	6	7	8	10	3	2	5	4	7	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	3	7	0	0	0	0	0	0 :	10
5. - 8. :	6	0	0	0	0	0	0	6	28	29	8	0	0	1	0	8	0 :	86
3. - 5. :	2	0	0	0	0	0	8	7	25	39	4	3	0	14	10	10	0 :	122
1. - 3. :	0	0	0	5	16	20	28	19	20	31	34	12	12	55	41	6	0 :	299
LT 1. :	11	6	4	5	12	5	15	9	7	20	31	9	5	13	30	12	0 :	194
TOTAL :	19	6	4	10	28	25	51	41	80	122	84	24	17	83	81	36	0	711
PERCENT	3.	1.	1.	1.	4.	4.	7.	6.	11.	17.	12.	3.	2.	12.	11.	5.	0.	100.

0 = NO OBSERVATIONS

(01/12/83-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(12/01/82 TO 12/31/82)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR		TOTAL
		9	1	0	2	2	3	6	9	10	11	14	5	4	7	7	10	0		
GT 11.	:	0	0	0	0	0	0	0	0	0	2	9	0	0	0	0	0	0	:	11
8. - 11.	:	1	0	0	0	0	0	0	3	19	20	5	0	0	0	0	8	0	:	56
5. - 8.	:	6	0	0	0	0	0	4	6	20	34	9	1	0	2	4	7	0	:	93
3. - 5.	:	0	0	0	0	0	2	15	15	22	35	7	3	5	28	15	6	0	:	153
1. - 3.	:	0	1	0	5	7	21	17	15	15	19	17	11	22	28	23	5	0	:	206
LT 1.	:	5	5	4	9	7	9	13	10	14	9	19	11	26	7	32	8	0	:	188
TOTAL	:	12	6	4	14	14	32	49	49	90	119	66	26	53	65	74	34	0		707
PERCENT		2.	1.	1.	2.	2.	5.	7.	7.	13.	17.	9.	4.	7.	9.	10.	5.	0.		100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(12/01/82 TO 12/31/82)

WIND SPEED MAX METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	10	0	2	2	2	3	7	10	12	13	16	7	6	8	7	11	0	
GT 11. :	0	0	0	0	0	0	0	0	7	16	13	0	0	0	0	2	0 :	38
8. - 11. :	6	0	0	0	0	0	0	4	22	30	4	0	0	1	0	6	0 :	73
5. - 8. :	8	0	0	0	0	0	1	8	16	37	11	2	1	4	9	5	0 :	102
3. - 5. :	0	0	0	0	0	2	9	19	28	23	15	4	3	25	38	7	0 :	173
1. - 3. :	3	0	3	4	7	17	19	18	19	20	10	12	25	30	28	13	0 :	228
LT 1. :	4	2	5	7	2	8	3	10	8	4	6	9	14	9	9	7	0 :	107
TOTAL :	21	2	8	11	9	27	32	59	100	130	59	27	43	69	84	40	0	721
PERCENT	3.	0.	1.	2.	1.	4.	4.	8.	14.	18.	8.	4.	6.	10.	12.	6.	0.	100.

0 = NO OBSERVATIONS

(01/12/83-RPI)

```
FIVE MAXIMUM SLIDING AVERAGE                                        C-B TRACT
UG/M**3                                                             SITE AB23
                                                                    DEC  1982
                                                                    CATHEDRAL BLUFFS SHALE OIL CO.

      COMPONENT      AVG. TIME       RANK       DAY      HOUR(BEG)     VALUE

        SO2             3 HR
                                      1          30          14          11.3
                                      2           5          11           9.6
                                      3           1           3           8.7
                                      4          14          13           7.9
                                      5          26           3           7.9

        SO2            24 HR
                                      1          30          13           6.2
                                      2          25          12           6.0
                                      3           1           1           4.9
                                      4           4          16           4.9
                                      5           3          11           4.5

        CO              1 HR
                                      1           1          10         100.0
                                      2           2          16         100.0
                                      3           4           9         100.0
                                      4           6          11         100.0
                                      5           7           9         100.0

        CO              8 HR
                                      1          16          13         100.0
                                      2          16          21         100.0
                                      3          17           5         100.0
                                      4          17          17           0.0
                                      5           1           3           0.0

        O3              1 HR
                                      1          14          13          82.4
                                      2          18          15          78.5
                                      3           1           4          76.5
                                      4           6          15          76.5
                                      5           6          16          76.5

        PART           24 HR
                                      1           5           1           6.4
                                      2          17           1           6.3
                                      3          21           1           4.8
                                      4          25           1           4.0
                                      5          29           1           2.1
```

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

DECEMBER 1982

GASEOUS PARAMETERS

NOX: 97 %

NO: 97

NO2: 97

O3: 97

CO: 97

SO2: 97

H2S: 97

PARTICULATES: 100 %

METEOROLOGICAL PARAMETERS

WIND SPEED	
10 M:	97 %
30 M:	97
60 M:	97
WIND DIRECTION	
10 M:	97
30 M:	97
60 M:	97
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	97
30 M:	97
60 M:	97
TEMPERATURE	
10 M:	97
30 M:	97
60 M:	97
DELTA TEMPERATURE:	97
RELATIVE HUMIDITY:	100
SOLAR RADIATION:	26
BAROMETRIC PRESSURE:	97
PRECIPITATION:	100

DATA CORRECTIONS

2.3.10 Data Corrections

The following data were reported incorrectly previously. The correct data include:

Description	Page No.
Air Quality Quarterly Summary at Station AB23	
December 1981 - February 1982	II-572
Particulates Daily Average at Station AB23	
January	II-573
February	II-574
March	II-575
April	II-576

QUARTERLY SUMMARY (DECEMBER 1981 - FEBRUARY 1982)

($\mu g/m^3$)

STATION AB23

Parameter	Average	Maximum 24-Hour Value	Maximum 24-Hour Date	Maximum 24-Hour Time	Maximum 8-Hour Value	Maximum 8-Hour Date	Maximum 8-Hour Time	Maximum 3-Hour Value	Maximum 3-Hour Date	Maximum 3-Hour Time	Maximum 1-Hour Value	Maximum 1-Hour Date	Maximum 1-Hour Time
H_2S	1.5										11.0		(4)
SO_2	1.4	5.8	1/17/82	2100				8.7		(3)	10.0		(5)
Particulate	2.3	18.6	12/11/81	0100									
O_3	63.3										133.4	2/10/82	0700
NO_x	(1)										71.0	1/09/82	1100
NO	(1)										29.0	1/09/82	1100
NO_2	(1)										28.0	2/01/82	0100
CO	9.1				200.0		(2)				200.0		(6)

(1) <75% data for quarter, therefore no averages reported.
(2) Maximum 8-hour concentration of CO occurred 3 times: 12/14/81 @ 1100, 1/3/82 @ 2300 and 2/3/82 @ 2400.
(3) Maximum 3-hour concentration of SO_2 occurred 2 times: 2/24/82 @ 1000 and 2/25/82 @ 1100.
(4) Maximum 1-hour concentration of H_2S occurred 2 times: 1/7/82 @ 1900 and 1/14/82 @ 1200.
(5) Maximum 1-hour concentration of SO_2 occurred 3 times: 1/12/82 @ 1200, 2/24/82 @ 1200 and 2/25/82 @ 1200.
(6) Maximum 1-hour concentration of CO_2 occurred 40 times; refer to monthly diurnal tables for times of occurrences.

PARTICULATE DATA
UG/M3

C-B TRACT
JAN 1982
OCCIDENTAL OIL SHALE, INC.

			STATION		
DAY	AB20	AB23	AB26	AD42	AD56
1	0.01	0.01	( )	( )	0.01
2	6.9	4.2	2.5	( )	5.1
4	5	4.3	4.7	( )	5.9
7	6.4	4	1.8	( )	1.1
13	4	4.1	3.4	( )	4
16	3.2	3.2	2	( )	2.6
19	7.2	6.3	2.8	( )	8.5
22	4.6	6.1	4.2	( )	4.5
25	2.1	2.3	1.8	( )	1.9
28	5.2	5	4.5	( )	0.9
31	( )	2.3	0.4	( )	( )
AVE	4.46	3.8	2.81	( )	3.45
GM	2.52	2.3	2.37	( )	1.72
PEAK	7.2	6.3	4.7	( )	8.5

PARTICULATE DATA
UG/M3

C-B TRACT
FEB 1982
OCCIDENTAL OIL SHALE, INC.

DAY	AB20	AB23	STATION AB26	AD42	AD56
4	( )	8.6	6.9	( )	( )
8	( )	9	6.9	( )	( )
12	( )	1.2	2	( )	( )
16	( )	(IM)	0.7	( )	( )
20	( )	1	1	( )	( )
24	( )	4.1	3.3	( )	( )
28	( )	8	11	( )	( )
AVE	( )	5.32	4.54	( )	( )
GM	( )	3.81	3.04	( )	( )
PEAK	( )	9	11	( )	( )

PARTICULATE DATA
UG/M3

C-B TRACT
MAR 1982
OCCIDENTAL OIL SHALE, INC.

	STATION				
DAY	AB20	AB23	AB26	AD42	AD56
4	( )	0.01	0.01	( )	( )
8	( )	0.1	1.4	( )	( )
12	( )	3.9	2.9	( )	( )
16	( )	4	0.01	( )	( )
20	( )	0.2	3.1	( )	( )
24	( )	12.1	6.4	( )	( )
28	( )	3.9	0.9	( )	( )
AVE	( )	3.46	2.1	( )	( )
GM	( )	.761	.495	( )	( )
PEAK	( )	12.1	6.4	( )	( )

PARTICULATE DATA
UG/M3

C-B TRACT
APR 1982
OCCIDENTAL OIL SHALE, INC.

	STATION				
DAY	AB20	AB23	AB26	AD42	AD56
1	( )	42.2	30.8	( )	( )
5	( )	14.2	12.3	( )	( )
9	( )	13.7	7.2	( )	( )
13	( )	7.8	4.4	( )	( )
17	( )	13.2	10.4	( )	( )
21	( )	14.2	14.9	( )	( )
25	( )	2.3	20.2	( )	( )
29	( )	14.1	( )	( )	( )
AVE	( )	15.2	14.3	( )	( )
GM	( )	11.9	12.1	( )	( )
PEAK	( )	42.2	30.8	( )	( )

SUPPLEMENTAL
DATA REPORTS

2.3.11 Supplemental Data Report

This section contains data prior to this reporting period which has never been reported; quarterly and annual ozone samples by concentration and wind direction tables, and quarterly and annual frequency tables of wind speed by direction.

List of Tables

Page No.

AD20, April 1982
- Wind Speed @ 10m II-578
- Wind Direction @ 10m II-579
- Temperature. II-580
- Precipitation. II-581
- Frequency Table of Wind Speed by Direction II-582

Precipitation @ AD28, April 1982 . . . . II-583

Number of Ozone 1-Hour Samples by Concentration and Wind Direction at 10m, by Quarter
- AB23, January - March, 1982. II-584
- AB23, April - June, 1982 . . . . II-585
- AB23, July - September, 1982 . . . . II-586
- AB23, October - December, 1982 . . . . II-587

Number of Ozone 1-Hour Samples by Concentration and Wind Direction at 10m, AB23, 1982 Annual. II-588

Frequency Table of Wind Speed by Direction, by Quarter
- AA23 @ 10m, March - May, 1982. . . . . II-589
- AA23 @ 30m, March - May, 1982. . . . . II-590
- AA23 @ 60m, March - May, 1982. . . . . II-591
- AD20 @ 10m, March - May, 1982. . . . . II-592
- AA23 @ 10m, June - August, 1982. . . . . II-593
- AA23 @ 30m, June - August, 1982. . . . . II-594
- AA23 @ 60m, June - August, 1982. . . . . II-595
- AA23 @ 10m, September - November, 1982 . . . . II-596
- AA23 @ 30m, September - November, 1982 . . . . II-597
- AA23 @ 60m, September - November, 1982 . . . . II-598

Frequency Table of Wind Speed by Direction, 1982 Annual
- AA23 @ 10m, December 1981 - November 1982. . . . . II-599
- AA23 @ 30m, December 1981 - November 1982. . . . . II-600
- AA23 @ 60m, December 1981 - November 1982. . . . . II-601

WIND SPEED @10M
METERS/SEC

CB TRACT
MRI AD20
APR 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	4	2	3	4	5	5	4	4	4	5	4	6	6	6	6	5	4	6	6	6	5	4	4	3	5	6
2	1	3	6	4	2	2	4	5	1	8	7	7	6	8	8	7	7	6	2	1	1	2	2	2	4	8
3	3	3	2	2	2	3	3	3	4	5	5	4	4	5	5	5	5	3	1	2	2	2	2	3	3	5
4	2	2	2	2	2	2	2	2	5	6	8	6	7	7	7	7	6	3	2	1	4	3	3	1	4	8
5	2	2	3	3	3	3	4	3	3	2	2	3	3	3	3	3	2	2	3	2	1	1	1	1	2	4
6	3	2	1	2	3	2	2	2	3	6	6	6	5	6	6	5	5	4	3	4	3	1	1	2	3	6
7	4	4	2	3	4	3	4	3	3	3	3	3	3	3	2	2	2	2	0	1	2	3	3	4	3	4
8	3	4	3	3	4	4	4	4	4	2	2	2	3	6	6	6	3	3	3	4	3	1	1	1	3	6
9	1	3	2	3	3	3	3	3	2	1	2	2	2	3	4	7	6	5	4	2	1	1	0	1	3	7
10	1	1	1	1	4	3	3	4	3	2	3	3	3	3	3	4	4	3	2	1	2	2	3	3	3	4
11	2	2	2	3	3	1	1	2	4	5	5	6	6	4	5	5	4	3	3	3	3	4	4	2	3	6
12	3	5	4	4	4	2	1	1	2	3	2	3	3	3	2	3	2	2	2	1	1	1	2	3	3	5
13	(IM)	3	1	1	1	1	1	2	1	4	4	4	4	4	4	4	4	3	1	2	2	2	2	3	3	4
14	2	2	2	3	5	4	5	3	3	4	5	5	7	5	5	5	5	4	1	1	2	2	3	4	4	7
15	2	2	2	2	2	2	2	1	5	5	3	4	4	5	6	2	3	6	6	5	2	2	3	2	3	6
16	2	1	1	1	1	1	1	1	2	3	4	4	3	4	4	3	3	2	2	1	1	0	1	2	2	4
17	2	2	2	2	2	2	2	2	1	2	2	3	5	4	5	5	4	3	2	1	2	2	3	3	3	5
18	3	3	4	3	2	3	4	3	2	5	8	9	8	9	10	10	9	8	7	3	4	3	2	2	5	10
19	1	2	1	2	2	1	1	1	2	3	4	4	5	4	4	4	4	4	4	3	2	2	1	1	3	5
20	2	1	1	1	1	1	0	2	4	4	4	3	3	3	3	4	4	3	3	1	1	1	2	1	2	4
21	1	2	2	2	2	2	1	1	3	4	3	3	3	3	3	3	3	3	1	1	1	1	1	2	2	4
22	2	2	2	2	2	2	2	1	1	3	2	2	3	3	3	2	2	2	2	2	2	2	3	2	2	3
23	1	3	3	3	1	1	3	2	1	2	1	1	1	1	2	2	3	3	4	5	3	2	2	2	2	5
24	2	2	2	3	2	3	3	3	3	1	2	3	3	3	5	4	3	3	3	2	3	2	2	2	3	5
25	2	2	2	1	2	3	3	3	2	2	2	3	2	3	5	5	4	2	2	2	2	2	3	1	3	5
26	1	2	2	2	2	4	4	3	3	1	3	4	3	3	3	6	9	5	2	2	2	3	2	1	3	9
27	3	3	2	2	1	1	2	2	3	3	3	3	2	2	2	4	(IM)	(IM)	1	1	1	1	1	2	2	4
28	2	2	2	2	(IM)	(IM)	3	3	2	1	2	2	2	2	4	2	3	3	1	1	1	2	3	3	2	4
29	4	4	4	2	1	2	4	3	4	2	2	4	4	3	3	3	2	2	2	2	2	3	2	1	3	4
30	1	2	2	2	2	3	3	3	1	1	2	3	3	3	2	3	1	2	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	2	3
AV	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	3	3	2	2	2	2	2	3	
PK	4	5	6	4	5	5	5	5	5	8	8	9	8	9	10	10	9	8	7	6	5	4	4	4		10

WIND DIRECTION @10M
DEGREES

CB TRACT
MRI AD20
APR 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	107	88	110	103	128	120	106	127	155	179	177	190	200	199	164	156	137	166	168	158	169	212	209	235	157
2	162	83	266	288	294	266	275	279	267	266	265	271	273	268	272	266	267	258	247	121	86	84	90	100	221
3	110	98	109	100	102	109	112	97	122	154	164	162	197	217	226	212	219	214	169	96	94	86	105	111	141
4	95	105	82	73	84	88	82	158	177	189	198	210	224	224	226	282	333	354	267	272	282	241	283	66	191
5	90	93	118	119	122	110	120	116	121	101	119	116	175	157	184	177	172	167	207	281	169	115	118	106	141
6	95	80	93	104	104	103	94	92	167	193	206	183	178	221	224	207	210	213	214	198	201	213	143	233	165
7	272	264	274	253	255	262	267	263	259	262	279	341	296	332	314	302	328	237	70	80	114	122	122	126	237
8	129	121	117	122	124	128	127	120	124	115	111	245	267	278	281	268	189	194	224	293	348	235	15	279	186
9	24	108	120	118	122	112	97	110	115	111	84	177	179	213	248	283	286	298	312	311	132	124	246	250	174
10	98	117	97	89	113	117	117	102	78	178	184	191	177	182	174	161	161	171	123	96	89	91	110	108	130
11	102	106	90	79	80	109	101	98	184	171	174	204	203	192	172	178	177	167	115	136	131	136	157	189	144
12	209	232	233	216	309	301	98	26	293	319	327	345	328	275	324	336	320	17	12	84	95	86	88	122	208
13	(IM)	124	265	220	88	61	87	96	26	200	177	185	200	235	230	208	208	185	158	92	87	104	97	92	149
14	84	85	91	93	119	109	115	102	192	215	216	226	250	208	194	222	224	213	181	89	78	88	96	121	150
15	113	87	87	85	88	87	87	239	274	285	297	285	290	280	286	312	314	284	289	293	109	320	295	274	223
16	283	283	18	42	101	99	76	279	344	314	301	290	281	275	322	336	330	343	358	71	101	108	100	93	214
17	99	102	97	90	92	83	90	105	98	225	230	224	256	255	240	229	222	208	221	113	93	99	96	108	153
18	103	107	124	104	85	106	118	112	264	275	273	267	263	270	280	284	285	289	287	299	305	328	288	284	225
19	336	4	82	94	95	96	106	48	261	275	265	260	320	272	300	326	319	319	313	328	14	2	347	312	212
20	286	267	87	50	101	95	59	299	10	12	357	357	15	76	360	336	343	351	350	8	309	84	98	92	183
21	92	91	89	93	98	90	100	95	274	260	355	5	13	355	9	357	3	347	339	146	119	90	93	92	150
22	93	103	97	103	87	90	98	110	260	122	103	31	86	133	116	83	78	152	96	63	93	87	101	106	104
23	85	100	123	125	119	96	115	209	288	129	121	248	259	252	294	266	284	217	90	110	88	97	84	105	163
24	88	100	113	113	119	118	115	99	92	63	276	325	294	291	261	285	238	210	266	39	100	91	95	52	160
25	92	98	111	96	90	103	122	123	124	288	286	292	185	123	138	129	128	96	193	102	91	100	115	108	139
26	105	103	89	95	102	113	115	126	262	241	191	176	96	100	243	264	289	321	111	25	266	111	106	86	156
27	118	111	105	95	324	96	282	283	102	94	92	4	85	345	252	332	(IM)	(IM)	358	52	29	86	98	95	156
28	93	92	95	90	(IM)	(IM)	113	124	112	22	276	24	73	259	287	171	198	194	194	80	78	87	104	97	130
29	105	99	97	75	116	291	302	289	288	286	159	301	353	342	335	345	347	348	351	68	91	97	89	99	220
30	93	90	99	92	104	122	127	126	313	278	266	275	282	283	272	256	135	139	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	186
PV	130	118	119	114	130	127	127	148	188	194	218	214	210	237	241	252	233	230	217	141	137	128	137	143	172

TEMPERATURE @10M
DEGREE C

CB TRACT
MRI AD20
APR 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	6	6	5	7	7	7	7	9	9	9	10	11	11	11	10	10	9	9	9	9	8	7	4	1	8	11
2	0	0	-2	-5	-5	-7	-7	-7	-5	-3	-2	-1	0	0	1	2	3	3	2	-2	-4	-5	-5	-6	-2	3
3	-6	-5	-4	-4	-3	-2	-2	1	3	5	6	7	8	9	10	10	10	9	7	3	2	1	1	1	3	10
4	0	0	-1	-1	0	-1	-1	6	7	8	9	10	10	10	10	8	3	0	-2	-3	-2	-3	-5	-7	2	10
5	-10	-11	-12	-13	-13	-14	-13	-10	-6	-2	-1	0	2	3	4	4	4	3	2	1	0	-1	-1	-1	-4	4
6	0	0	-1	-2	-3	-4	-3	0	5	6	7	8	8	9	9	9	9	8	8	8	7	5	4	2	4	9
7	-1	-2	-2	-2	-3	-4	-5	-6	-6	-6	-4	-3	-4	-6	-4	-2	-2	-5	-6	-10	-12	-13	-14	-14	-6	-1
8	-13	-14	-15	-16	-17	-18	-16	-13	-9	-3	-2	0	0	1	1	1	0	0	0	-1	-2	-3	-3	-5	-6	1
9	-6	-8	-9	-10	-11	-12	-11	-8	-4	-1	0	1	3	3	4	4	3	2	0	-1	-3	-5	-7	-8	-4	4
10	-9	-9	-9	-10	-10	-10	-8	-4	0	2	3	5	7	8	9	9	9	9	7	3	1	-1	-1	0	0	9
11	0	0	0	4	7	6	5	9	11	11	12	13	13	13	14	14	13	13	12	12	11	11	11	11	9	14
12	11	11	10	9	6	4	4	7	9	9	9	8	8	8	8	8	10	9	7	4	1	0	-1	-1	6	11
13	(IM)	0	0	-1	-2	-3	-2	4	10	12	13	14	14	15	15	15	15	15	13	10	7	4	3	2	7	15
14	1	0	0	0	0	-1	1	7	12	13	13	14	14	15	15	16	15	14	13	8	6	4	2	1	8	16
15	0	0	0	0	-1	-1	1	7	9	10	11	12	12	11	9	9	9	10	8	7	6	4	1	-2	5	12
16	-3	-5	-7	-9	-10	-11	-9	-5	-2	0	1	1	2	3	4	5	4	4	2	-1	-4	-7	-8	-9	-3	5
17	-9	-10	-10	-11	-11	-10	-8	-2	5	8	10	11	12	12	13	13	13	13	11	5	2	0	-1	-1	2	13
18	-2	-3	-3	-4	-4	-5	-2	3	9	11	12	12	12	13	12	12	10	9	7	5	4	1	-2	-3	4	13
19	-5	-7	-10	-11	-12	-13	-10	-6	-4	-3	-3	-2	-2	-1	-1	-1	-2	-2	-3	-4	-4	-5	-6	-7	-5	-1
20	-9	-10	-12	-14	-15	-15	-13	-8	-5	-4	-3	-2	-2	-1	0	-1	-1	-1	-2	-3	-4	-6	-9	-11	-6	0
21	-12	-12	-12	-12	-13	-13	-11	-7	-4	-1	3	5	6	7	8	9	9	9	7	4	-1	-4	-6	-7	-2	9
22	-8	-8	-8	-9	-10	-10	-7	-1	5	9	11	13	14	15	15	15	16	15	13	7	3	2	3	2	4	16
23	1	0	1	1	1	1	1	4	5	3	2	3	6	7	9	10	9	8	5	4	4	4	3	2	4	10
24	0	-1	-1	-1	-1	-2	-1	3	6	9	11	13	14	15	15	15	14	14	14	9	8	8	9	6	7	15
25	3	1	0	-2	-3	-3	0	4	10	12	13	14	14	14	12	12	12	13	12	10	7	6	3	2	7	14
26	1	0	0	-1	-1	1	3	6	7	11	11	9	11	12	14	13	10	6	6	5	5	5	4	3	6	14
27	3	3	3	2	2	1	3	4	4	5	6	7	10	12	13	13	(IM)	(IM)	11	9	7	5	2	1	6	13
28	0	-2	-2	-3	(IM)	(IM)	-1	4	10	14	14	15	16	17	18	19	18	18	16	11	9	8	6	6	10	19
29	6	6	7	11	9	9	7	7	6	4	6	6	8	10	12	12	13	12	11	7	4	2	0	-1	7	13
30	-2	-3	-4	-5	-5	-4	-2	1	6	10	13	15	17	18	18	18	19	18	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	7	19
AV	-2	-3	-3	-4	-4	-5	-3	0	4	5	6	7	8	9	9	9	9	8	7	4	2	1	0	-1	3	
PK	11	11	10	11	9	9	7	9	12	14	14	15	17	18	18	19	19	18	16	12	11	11	11	11		19
MN	-13	-14	-15	-16	-17	-18	-16	-13	-9	-6	-4	-3	-4	-6	-4	-2	-2	-5	-6	-10	-12	-13	-14	-14		

MONTHLY MINIMUM = -18

PRECIPITATION
CM*100

CB TRACT
MRI AD20
APR 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1																									
2					25	3					5														33
3																									
4																									
5	5																								5
6																									
7													8	5	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	13
8	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
9	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
10	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
11	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
12	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)							( )
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									
23										3	25	13	3							5			10		58
24									5	3															8
25																									
26																									
27													5												5
28																									
29														3	8										10
30																			(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	
TL	5				25	3			5	5	30	13	15	8	8					5			10		( )

```
                            FREQUENCY TABLE OF WIND SPEED BY DIRECTION

     10 METER LEVEL                                                                     CATHEDRAL BLUFFS SHALE OIL

                                 STATION AD20   PERIOD( 4/01/82 TO  4/30/82)

                                                          WIND DIRECTION
                    N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  VAR  TOTAL
WIND SPEED
   MAX              4    4    2    3    4    5    5    6    5    7    6    7    9   10    5    5    0
METERS/SEC
              ..........................................................................................

  GT   11. :    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :    0

 8. -  11. :    0    0    0    0    0    0    0    0    0    0    0    0    5    3    0    0    0 :    8

 5. -   8. :    0    0    0    0    0    1    2    4    7   10   10    3   15   10    1    1    0 :   64

 3. -   5. :   11    2    0    1    7   36   12   11   18   19   14    6   17   20   11    8    0 :  193

 1. -   3. :    9   12    3   12  144   88   11    7   12   10    5   11   27   23   10   17    0 :  401

  LT    1. :    1    2    3    4   11    5    3    0    1    1    1    3    2    2    1    2    0 :   42

   TOTAL   :   21   16    6   17  162  130   28   22   38   40   30   23   66   58   23   28    0    708
              ..........................................................................................

   PERCENT     3.   2.   1.   2.  23.  18.   4.   3.   5.   6.   4.   3.   9.   8.   3.   4.   0.  100.

              0 = NO OBSERVATIONS
```

PRECIPITATION
CM*100

CB TRACT
MRI AD28
APR 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1														(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	
2	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
3	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
4	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	( )
5	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)	(RF)										3	3		5
6																									
7		3															8	18							28
8											13					5									18
9																									
10																									
11																									
12						3	3					5	3	3	3										18
13																									
14																									
15	3																								3
16																							3	3	5
17																									
18																						3	3		5
19																									
20																									
21																									
22																									
23										18	13	8							8	5	5				56
24									3																3
25															5					3					8
26	3																								3
27											13			3											15
28																									
29												3	3	5											10
30	3																								3
TL	8	3				3	3		3	18	38	15	5	10	8	5	8	18	8	8	5	5	8	3	( )

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(1/01/82 TO 3/31/82)

CONCENTRATION	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	92	84	86	103	84	86	92	105	121	113	109	90	133	101	125	92	103	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0 :	1
120. - 130. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0 :	2
110. - 120. :	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0 :	2
100. - 110. :	0	0	0	1	0	0	0	1	1	3	4	0	0	1	2	0	1 :	14
90. - 100. :	1	0	0	0	0	0	3	2	0	7	3	1	1	2	1	1	0 :	22
80. - 90. :	6	3	1	2	3	10	7	5	11	25	31	0	2	7	4	9	1 :	127
70. - 80. :	15	8	1	7	5	11	20	28	31	52	30	14	8	19	23	19	6 :	297
60. - 70. :	24	16	14	8	9	16	34	30	51	60	87	21	23	29	46	37	10 :	515
50. - 60. :	6	5	3	6	4	11	5	15	21	32	25	10	23	28	27	23	4 :	248
40. - 50. :	1	0	1	0	2	1	1	1	5	3	6	7	4	5	10	6	2 :	55
30. - 40. :	3	0	1	0	0	0	0	0	1	0	0	0	0	0	3	2	1 :	11
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0 :	2
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	56	32	21	24	23	49	70	82	123	183	186	53	62	91	118	98	25	1296
PERCENT	4.	2.	2.	2.	2.	4.	5.	6.	9.	14.	14.	4.	5.	7.	9.	8.	2.	100.

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(4/01/82 TO 6/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	103	103	105	99	90	92	96	88	129	129	135	129	111	137	123	117	88	
GT 140.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130. - 140.	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
120. - 130.	0	0	0	0	0	0	0	0	2	3	0	2	0	1	1	0	0	9
110. - 120.	0	0	0	0	0	0	0	0	1	7	11	3	1	1	0	1	0	25
100. - 110.	4	2	1	0	0	0	0	0	5	16	13	6	3	6	4	3	0	63
90. - 100.	19	13	2	4	1	3	7	0	23	35	42	7	10	24	38	29	0	257
80. - 90.	44	25	11	7	9	7	17	12	45	109	59	28	23	24	53	48	5	526
70. - 80.	25	19	11	11	15	10	15	35	60	63	43	14	24	27	58	30	5	465
60. - 70.	9	3	9	14	14	22	32	43	35	40	38	25	14	18	25	21	8	370
50. - 60.	2	4	6	3	7	10	14	15	12	11	23	10	5	12	13	7	4	158
40. - 50.	0	2	3	1	3	8	2	0	2	7	9	6	7	8	3	3	7	71
30. - 40.	0	0	0	0	0	0	0	0	0	1	0	0	1	0	4	0	1	7
20. - 30.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT 20.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	103	68	43	40	49	60	87	105	185	292	239	101	88	122	199	142	30	1953
PERCENT	5.	3.	2.	2.	3.	3.	4.	5.	9.	15.	12.	5.	5.	6.	10.	7.	2.	100.

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(7/01/82 TO 9/30/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	101	101	99	101	92	98	101	143	103	107	107	109	107	99	105	105	86	
GT 140. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
130. - 140. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	2	2	0	1	0	0	1	0	1	3	5	1	3	0	4	3	0 :	26
90. - 100. :	7	3	14	5	2	8	6	4	4	18	25	11	7	15	16	14	0 :	159
80. - 90. :	19	8	8	10	11	15	22	28	31	77	74	22	10	18	31	26	4 :	414
70. - 80. :	5	7	13	12	14	25	38	32	62	90	39	16	15	13	19	12	12 :	424
60. - 70. :	7	10	16	16	33	55	62	50	49	69	33	16	16	16	19	19	10 :	496
50. - 60. :	4	5	13	10	21	20	23	23	31	32	22	13	14	13	11	11	1 :	267
40. - 50. :	8	3	5	9	6	15	29	27	18	31	15	9	7	6	9	2	7 :	206
30. - 40. :	2	1	0	5	6	4	9	5	8	10	9	8	3	4	1	5	2 :	82
20. - 30. :	1	0	0	6	1	1	5	7	7	7	10	2	2	4	3	3	2 :	61
LT 20. :	0	0	0	0	0	0	0	0	0	0	2	1	0	1	1	0	1 :	6
TOTAL :	55	39	69	74	94	143	195	178	211	337	234	99	77	90	114	95	39	2143
PERCENT	3.	2.	3.	3.	4.	7.	9.	8.	10.	16.	11.	5.	4.	4.	5.	4.	2.	100.

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(10/01/82 TO 12/31/82)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	84	86	82	74	80	82	80	84	86	92	99	88	84	82	82	84	76	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0 :	7
80. - 90. :	2	4	1	0	1	6	2	2	10	38	24	2	2	2	6	2	0 :	104
70. - 80. :	20	13	6	4	20	20	28	34	52	105	56	16	13	34	54	17	4 :	496
60. - 70. :	30	17	17	19	48	69	76	68	110	148	62	23	21	39	68	64	10 :	889
50. - 60. :	11	7	4	14	10	12	29	30	40	53	60	16	14	26	26	11	14 :	377
40. - 50. :	0	3	4	1	7	6	17	13	20	16	30	13	5	31	12	1	10 :	189
30. - 40. :	1	0	1	1	1	4	6	3	5	2	4	4	4	5	2	0	4 :	47
20. - 30. :	1	0	0	1	4	4	1	1	0	0	1	0	0	7	0	0	2 :	22
LT 20. :	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1 :	4
TOTAL :	67	44	33	40	91	121	159	151	237	365	241	74	59	145	168	95	45	2135
PERCENT	3.	2.	2.	2.	4.	6.	7.	7.	11.	17.	11.	3.	3.	7.	8.	4.	2.	100.

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(1/01/82 TO 12/31/82)

	WIND DIRECTION																	
CONCENTRATION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	103	103	105	103	92	98	101	143	129	129	135	129	133	137	125	117	103	
GT 140.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
130. - 140.	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	4
120. - 130.	0	0	0	0	0	0	0	0	3	3	0	2	0	1	2	0	0	11
110. - 120.	0	0	0	0	0	0	0	0	2	8	11	3	1	1	0	1	0	27
100. - 110.	6	4	1	2	0	0	1	1	7	22	22	7	6	7	10	6	1	103
90. - 100.	27	16	16	9	3	11	16	6	27	63	74	19	18	41	55	44	0	445
80. - 90.	71	40	21	19	24	38	48	47	97	249	188	52	37	51	94	85	10	1171
70. - 80.	65	47	31	34	54	66	101	129	205	310	168	60	60	93	154	78	27	1682
60. - 70.	70	46	56	57	104	162	204	191	245	317	220	85	74	102	158	141	38	2270
50. - 60.	23	21	26	33	42	53	71	83	104	128	130	49	56	79	77	52	23	1050
40. - 50.	9	8	13	11	18	30	49	41	45	57	60	35	23	50	34	12	26	521
30. - 40.	6	1	2	6	7	8	15	8	14	13	13	12	8	9	10	7	8	147
20. - 30.	2	0	0	7	5	5	6	8	7	7	11	2	2	11	4	4	4	85
LT 20.	2	0	0	0	0	0	0	0	0	0	2	1	0	2	1	0	2	10
TOTAL	281	183	166	178	257	373	511	516	756	1177	900	327	286	448	599	430	139	7527
PERCENT	4.	2.	2.	2.	3.	5.	7.	7.	10.	16.	12.	4.	4.	6.	8.	6.	2.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(3/01/82 TO 5/31/82)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR		TOTAL
		WIND DIRECTION																		
		6	5	5	2	2	2	3	8	10	10	10	7	8	8	6	6	0		
GT 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
8. - 11.	:	0	0	0	0	0	0	0	1	18	7	16	0	1	2	0	0	0	:	45
5. - 8.	:	1	3	2	0	0	0	0	2	62	77	68	16	12	14	12	5	0	:	274
3. - 5.	:	26	18	6	0	0	0	1	18	69	120	87	16	34	29	56	39	0	:	519
1. - 3.	:	49	20	15	18	21	25	41	43	60	66	75	55	40	46	69	61	0	:	704
LT 1.	:	21	16	9	18	12	25	24	40	34	41	48	21	13	13	21	21	0	:	377
TOTAL	:	97	57	32	36	33	50	66	104	243	311	294	108	100	104	158	126	0		1919
PERCENT		5.	3.	2.	2.	2.	3.	3.	5.	13.	16.	15.	6.	5.	5.	8.	7.	0.		100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(3/01/82 TO 5/31/82)

WIND SPEED METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX		6	8	7	3	2	3	4	11	14	14	14	9	10	11	11	8	0	
GT	11. :	0	0	0	0	0	0	0	1	16	5	16	0	0	1	1	0	0 :	40
8. -	11. :	0	1	0	0	0	0	0	0	48	54	46	12	10	9	8	2	0 :	190
5. -	8. :	8	11	6	0	0	0	0	16	68	113	89	16	18	21	26	22	0 :	414
3. -	5. :	34	17	4	2	0	16	19	24	30	71	46	21	36	37	67	50	0 :	474
1. -	3. :	35	16	17	17	20	34	34	43	29	39	33	33	44	48	59	37	0 :	538
LT	1. :	20	14	16	7	15	12	14	23	19	25	20	23	19	13	20	16	0 :	276
TOTAL	:	97	59	43	26	35	62	67	107	210	307	250	105	127	129	181	127	0	1932
PERCENT		5.	3.	2.	1.	2.	3.	3.	6.	11.	16.	13.	5.	7.	7.	9.	7.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(3/01/82 TO 5/31/82)

WIND DIRECTION

WIND SPEED METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	8	8	8	4	3	4	5	8	16	16	16	11	12	12	10	9	0	
GT 11. :	0	0	0	0	0	0	0	0	24	20	25	1	1	5	0	0	0 :	76
8. - 11. :	1	3	1	0	0	0	0	3	56	92	80	17	13	12	16	9	0 :	303
5. - 8. :	10	15	6	0	0	0	3	11	42	90	104	16	16	22	30	35	0 :	400
3. - 5. :	42	20	12	2	3	12	23	29	34	52	39	21	25	43	71	56	0 :	484
1. - 3. :	45	24	18	13	24	25	36	30	20	37	27	30	36	36	55	46	0 :	502
LT 1. :	9	10	7	10	14	7	10	7	15	9	14	14	18	12	11	9	0 :	176
TOTAL :	107	72	44	25	41	44	72	80	191	300	289	99	109	130	183	155	0	1941
PERCENT	6.	4.	2.	1.	2.	2.	4.	4.	10.	15.	15.	5.	6.	7.	9.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AD20 PERIOD(3/01/82 TO 5/31/82)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR		TOTAL
		4	4	3	4	5	5	7	7	6	7	6	9	9	10	5	5	0		
GT 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
8. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	1	10	3	0	0	0	:	14
5. - 8.	:	0	0	0	0	1	7	29	23	19	15	18	5	32	25	1	2	0	:	177
3. - 5.	:	17	3	1	6	21	99	36	37	47	46	32	21	57	54	31	12	0	:	520
1. - 3.	:	25	25	15	39	380	267	29	27	20	33	27	32	87	70	33	34	0	:	1143
LT 1.	:	5	5	6	11	43	24	11	3	7	2	4	9	11	8	6	8	0	:	163
TOTAL	:	47	33	22	56	445	397	105	90	93	96	81	68	197	160	71	56	0		2017
PERCENT		2.	2.	1.	3.	22.	20.	5.	4.	5.	5.	4.	3.	10.	8.	4.	3.	0.		100.

0 = NO OBSERVATIONS

```
                         FREQUENCY TABLE OF WIND SPEED BY DIRECTION

   10 METER LEVEL                                                                        CATHEDRAL BLUFFS SHALE OIL

                          STATION AA23   PERIOD( 6/01/82 TO  8/31/82)

                                                WIND DIRECTION
                N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  VAR  TOTAL
WIND SPEED
   MAX          4    4    4    5    4    4    4    7    8   10    9    9    7    7    6    5    0
METERS/SEC
          ..............................................................................................
 GT   11. :     0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0 :     0

 8. - 11. :     0    0    0    0    0    0    0    0    2    6    3    2    0    0    0    0    0 :    13

 5. -  8. :     0    0    0    1    0    0    0    6   24   63   48    6    4    5    5    2    0 :   164

 3. -  5. :     9    8    6    6    7   13   16   33   47  105   55   27    8   22   31   18    0 :   411

 1. -  3. :    24   17   29   33   46   85  109   72   57  103   88   42   47   53  102   60    0 :   967

 LT    1. :    25   21   33   20   34   28   37   40   50   57   56   24   29   22   26   32    0 :   534

  TOTAL   :    58   46   68   60   87  126  162  151  180  334  250  101   88  102  164  112    0   2089
          ..............................................................................................

  PERCENT      3.   2.   3.   3.   4.   6.   8.   7.   9.  16.  12.   5.   4.   5.   8.   5.   0.  100.

          0 = NO OBSERVATIONS
```

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(6/01/82 TO 8/31/82)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	6	6	5	7	6	6	7	9	11	13	13	12	10	8	9	8	0	
GT 11. :	0	0	0	0	0	0	0	0	1	4	4	2	0	0	0	0	0 :	11
8. - 11. :	0	0	0	0	0	0	0	6	18	44	36	5	2	1	5	1	0 :	118
5. - 8. :	1	3	1	4	4	2	12	19	34	93	53	14	6	15	10	4	0 :	275
3. - 5. :	12	11	15	16	12	54	48	44	43	85	51	31	19	30	61	36	0 :	568
1. - 3. :	24	13	24	25	31	67	92	62	42	52	45	30	52	57	72	52	0 :	740
LT 1. :	29	12	18	13	20	16	32	29	32	41	26	31	16	29	27	16	0 :	387
TOTAL :	66	39	58	58	67	139	184	160	170	319	215	113	95	132	175	109	0	2099
PERCENT	3.	2.	3.	3.	3.	7.	9.	8.	8.	15.	10.	5.	5.	6.	8.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(6/01/82 TO 8/31/82)

WIND SPEED	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX METERS/SEC	5	7	6	8	7	5	9	11	12	15	15	13	11	10	8	8	0	
GT 11. :	0	0	0	0	0	0	0	1	5	14	6	4	1	0	0	0	0 :	31
8. - 11. :	0	0	0	1	0	0	5	10	25	61	55	7	2	5	5	2	0 :	178
5. - 8. :	2	6	2	5	6	6	22	23	42	92	67	16	6	18	14	9	0 :	336
3. - 5. :	23	7	16	15	14	38	62	49	31	63	50	40	31	35	72	43	0 :	589
1. - 3. :	34	16	23	25	26	58	80	62	53	68	36	37	43	62	69	57	0 :	749
LT 1. :	14	7	14	11	9	15	15	22	17	21	20	18	16	10	13	12	0 :	234
TOTAL :	73	36	55	57	55	117	184	167	173	319	234	122	99	130	173	123	0	2117
PERCENT	3.	2.	3.	3.	3.	6.	9.	8.	8.	15.	11.	6.	5.	6.	8.	6.	0.	100.

0 = NO OBSERVATIONS

(12/07/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(9/01/82 TO 11/30/82)

	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
WIND SPEED MAX METERS/SEC	4	5	4	2	4	5	6	7	10	9	8	6	5	6	6	5	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	3	4	1	0	0	0	0	0	0 :	8
5. - 8. :	0	1	0	0	0	1	3	14	33	56	30	4	1	3	4	1	0 :	151
3. - 5. :	9	11	3	0	4	2	19	45	81	132	80	10	8	23	30	17	0 :	474
1. - 3. :	32	15	16	22	65	109	116	87	90	108	62	29	28	52	57	49	0 :	937
LT 1. :	25	20	27	33	30	28	40	39	43	56	50	40	25	24	22	25	0 :	527
TOTAL :	66	47	46	55	99	140	178	185	250	356	223	83	62	102	113	92	0	2097
PERCENT	3.	2.	2.	3.	5.	7.	8.	9.	12.	17.	11.	4.	3.	5.	5.	4.	0.	100.

0 = NO OBSERVATIONS

(01/03/83-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(9/01/82 TO 11/30/82)

WIND SPEED METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	6	6	5	3	7	5	9	10	12	14	11	8	6	9	8	7	0	
GT 11. :	0	0	0	0	0	0	0	0	1	4	2	0	0	0	0	0	0 :	7
8. - 11. :	0	0	0	0	0	0	1	12	24	39	26	3	0	3	2	0	0 :	110
5. - 8. :	2	4	2	0	4	2	11	26	53	107	61	7	5	10	19	5	0 :	318
3. - 5. :	11	11	8	1	10	36	69	62	74	103	56	15	12	33	30	31	0 :	562
1. - 3. :	28	13	13	17	41	74	85	58	51	53	49	45	39	49	44	32	0 :	691
LT 1. :	14	16	25	15	39	30	23	25	36	30	30	28	23	22	25	15	0 :	396
TOTAL :	55	44	48	33	94	142	189	183	239	336	224	98	79	117	120	83	0	2084
PERCENT	3.	2.	2.	2.	5.	7.	9.	9.	11.	16.	11.	5.	4.	6.	6.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(9/01/82 TO 11/30/82)

WIND SPEED METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR		TOTAL
MAX		7	7	9	4	7	8	11	11	14	16	12	9	6	11	9	8	0		
GT 11.	:	0	0	0	0	0	0	1	1	8	15	4	0	0	2	0	0	0	:	31
8. - 11.	:	0	0	1	0	0	1	2	23	29	63	36	3	0	2	5	3	0	:	168
5. - 8.	:	2	5	3	0	1	4	15	33	68	131	90	14	4	17	21	13	0	:	421
3. - 5.	:	23	17	14	4	14	41	57	81	70	95	60	12	8	36	42	41	0	:	615
1. - 3.	:	47	18	21	24	24	43	59	55	81	63	43	42	38	50	43	43	0	:	694
LT 1.	:	8	12	6	9	11	10	17	15	20	17	14	10	22	9	16	10	0	:	206
TOTAL	:	80	52	45	37	50	99	151	208	276	384	247	81	72	116	127	110	0		2135
PERCENT		4.	2.	2.	2.	2.	5.	7.	10.	13.	18.	12.	4.	3.	5.	6.	5.	0.		100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23   PERIOD(12/01/81 TO 11/30/82)

	WIND DIRECTION																	
WIND SPEED	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
MAX	6	5	5	5	4	5	6	8	10	10	10	9	8	8	6	6	0	
METERS/SEC																		
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	1	27	21	41	2	1	2	0	0	0 :	95
5. - 8. :	2	4	4	1	0	1	3	22	135	258	196	32	21	27	26	12	0 :	744
3. - 5. :	54	41	20	6	11	16	38	113	239	504	304	64	79	109	152	101	0 :	1851
1. - 3. :	136	85	66	92	166	306	362	282	291	372	310	166	173	209	299	227	0 :	3542
LT 1. :	90	86	80	89	91	108	130	159	183	201	208	113	84	71	102	96	0 :	1891
TOTAL :	282	216	170	188	268	431	533	577	875	1356	1059	377	358	418	579	436	0	8123
PERCENT	3.	3.	2.	2.	3.	5.	7.	7.	11.	17.	13.	5.	4.	5.	7.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(12/01/81 TO 11/30/82)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	6	8	7	7	7	6	9	11	14	14	15	12	10	11	11	8	0	
GT 11. :	0	0	0	0	0	0	0	1	22	19	39	2	0	1	1	0	0 :	85
8. - 11. :	0	1	0	0	0	0	1	18	104	186	137	23	14	14	17	5	0 :	520
5. - 8. :	12	18	14	4	8	4	24	72	190	449	247	49	44	67	70	50	0 :	1322
3. - 5. :	75	47	29	21	22	130	168	165	217	356	182	83	108	150	206	150	0 :	2109
1. - 3. :	110	62	64	82	118	251	304	238	195	201	153	142	186	208	226	168	0 :	2708
LT 1. :	90	57	75	46	91	82	91	102	114	139	105	96	78	83	89	62	0 :	1400
TOTAL :	287	185	182	153	239	467	588	596	842	1350	863	395	430	523	609	435	0	8144
PERCENT	4.	2.	2.	2.	3.	6.	7.	7.	10.	17.	11.	5.	5.	6.	7.	5.	0.	100.

0 = NO OBSERVATIONS

(01/03/83-RP1)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23   PERIOD(12/01/81 TO 11/30/82)

WIND SPEED MAX METERS/SEC	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	8	8	9	8	7	8	11	11	16	16	16	13	12	12	10	9	0	
GT 11. :	0	0	0	0	0	0	1	2	43	61	77	5	2	7	0	0	0 :	198
8. - 11. :	2	3	3	1	0	1	7	38	129	270	224	34	19	25	32	22	0 :	810
5. - 8. :	22	28	16	5	7	10	40	74	189	435	349	57	46	82	90	78	0 :	1528
3. - 5. :	109	54	52	22	33	99	166	203	203	315	201	93	92	166	254	193	0 :	2255
1. - 3. :	167	75	78	83	97	153	232	215	219	249	147	131	141	188	225	197	0 :	2597
LT 1. :	50	43	39	39	42	42	58	55	67	64	70	53	72	47	54	44	0 :	839
TOTAL :	350	203	188	150	179	305	504	587	850	1394	1068	373	372	515	655	534	0	8227
PERCENT	4.	2.	2.	2.	2.	4.	6.	7.	10.	17.	13.	5.	5.	6.	8.	6.	0.	100.

0 = NO OBSERVATIONS

NOISE

2.4 Noise

No noise measurements are being collected during the Interim Monitoring Period.